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CONTINUING "THE ELEMENTARY SCHOOL TEACHER"

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EDUCATIONAL NEWS AND EDITORIAL COMMENT

The Cleveland Superintendency

The appointment of Dr. F. E. Spaulding to the superintendency of schools in the city of Cleveland is a fact of very broad educational significance. One of the results of the Cleveland survey was a realization on the part of the citizens and the Board of Education of that city that a reorganization of the educational system was desirable. The Board of Education went about the selection of a superintendent in a very systematic way. It secured the opinions of leading educators from all parts of the country, and by a series of conferences and visits selected from the various candidates proposed to them a limited number of men who were of the largest promise. They then prepared themselves for any negotiations with these able men by passing a resolution defining the relation which they would cultivate with the new superintendent. Attention should be drawn to this resolution as marking great progress in the definition of the relation between a board of education and a superintendent. That the Cleveland Board of Education could pass such a resolution as this before opening any negotiations shows how far the educational campaign conducted in connection with the survey was effective in creating a new attitude in school matters.

RESOLVED, That it is the sense of this meeting that educational policies should not be imposed upon the new Superintendent by the Board of Education, but that he should be looked to to inaugurate such educational policies

by and with the approval of the Board as he deems advisable; and to maintain them without interference by the Board, unless and until the lack of wisdom of any such policy be shown by experience: subject always however to financial exigencies which may face the Board.

The negotiations with Dr. Spaulding followed the passage of this resolution, and on January 13 the arrangement was consummated on the basis of a four-year contract and a salary of $12,000 annually. It may be remarked incidentally that this is the largest salary paid to a school superintendent in the United States, and it undoubtedly marks the beginning of a more complete recognition in large cities of the necessity of employing men of the highest ability as heads of the school systems.

The situation in Cleveland cannot be considered without going back to the city of Minneapolis to get at some of the reasons why Dr. Spaulding was willing to leave the work which he began in that city three years ago. Those who are acquainted with the circumstances under which Dr. Spaulding went to Minneapolis will remember that a very intelligent board of education then in office made its appointment of Superintendent Spaulding after a careful canvass of all of the possibilities in the country. Dr. Spaulding was at that time in Newton, Massachusetts, and had attracted nation-wide attention by his reports and by his efficient organization of the Newton schools. When he went to Minneapolis, he found the board ready to co-operate with him in organizing the school system under the best rules that could be devised. The board passed at his suggestion a model set of rules, putting the superintendent in charge of the school system, subordinating the business management to the superintendent's office, and giving the superintendent the initiative in all matters. That initiative Dr. Spaulding has used to the very great advantage of the Minneapolis schools. He has published a series of reports to the citizens of Minneapolis by means of which he has persuaded them to undertake a building campaign carefully planned and reaching far into the future. He has drawn their attention to the reasons for the course of study as he has it organized, and to the necessity of securing legislation for the proper conduct of their schools. At the same time he has demanded high standards of professional

efficiency among the teachers and principals of the city. Here he has encountered some opposition. No good superintendent can go into a city system which for years has allowed its teaching staff to drift along without the enforcement of vigorous standards of efficiency without encountering opposition. Dr. Spaulding was able, in spite of the condition in which he found the Minneapolis schools, to work, in the short period of his stay, notable reforms. The teaching staff is today unquestionably superior to the teaching staff which he found when he went into the schools.

In the meantime the Board of Education has changed entirely in its personnel. As an elective board, it was open to very radical changes through election. Perhaps no better way of describing that situation can be found than to quote an editorial from the *Minneapolis Journal* published on January 15:

> We had hoped that Dr. Spaulding would stay in Minneapolis and work out his plans for the regeneration of the Minneapolis school system. A majority of the School Board were with him and for him. They realize that he is one of the great educators of the country, and that it is a great pity to allow Cleveland to take him away from us, particularly at this critical moment in the working out of his plans.
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> Minneapolis, unfortunately, often does things in a crude way. It often elects non-taxpayers and those who understand neither education nor business management to the Board that is entrusted with the direction of this vastly important three million-dollar business.
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> In the present Board of seven members there were three who failed to rise to the situation. One of these, hostile to Dr. Spaulding, is so frequently out of the city that his usefulness as a member is much impaired. One, having been elected last November, takes the position that she is not yet sufficiently acquainted with Dr. Spaulding and his work to vote on the question of his retention. More than two months have elapsed since election, and seven months since the primaries. Yet with Dr. Spaulding's contract about to expire, why has she made no effort to investigate his work or assess his character as an educator?
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> Since Minneapolis has permitted Cleveland to take Dr. Spaulding, the school system is in danger of a serious setback, pending the difficult business of finding a worthy successor.

Interesting items with regard to the present Minneapolis Board of Education could be noted. One is perhaps worth commenting on in detail. One of the newly elected members of the Board of Education is stated on good authority to be at the present time under salary from one of the labor unions of that city. The salary which he receives is paid to him with the understanding that he is to visit

the schools and act on the Board in accordance with the views of an advisory committee of the union with which he is connected. This conception of the function of a member of the Board of Education as a supervisory officer raises many questions which school people will ultimately have to face. At all events, the fact is that Superintendent Spaulding finds his program of reform in Minneapolis seriously blockaded because of a complete reorganization within three years of the agencies which brought him to that city. The better citizens of Minneapolis were very vigorous in their efforts to retain Dr. Spaulding. He issued a statement, on accepting the Cleveland position, which is worth quoting because of the light which it throws on the life and activities of one of the leading superintendents of schools in this country.

To the Citizens of Minneapolis:

It was with the deepest regret that I decided last Saturday to leave the service of the Minneapolis public schools, a service in which from the first I have taken more satisfaction and pride than in any other that I have ever attempted. I believe I am justified in saying that I have always put my whole heart and strength into the work. Just now I am absorbed in and largely responsible for far-reaching plans of development and improvement that, when carried out, I am sure will place Minneapolis educationally in advance of the front rank of all large cities of the country. So it was with genuine grief and the utmost reluctance that I decided to relinquish any further considerable part in the realization of these plans.

I am leaving the work in Minneapolis, not because of the offer of a more attractive position, a larger field—an offer that came wholly unsought; not because the salary attached to this position that I have accepted is 50 per cent higher than that received in Minneapolis. I am leaving the work here solely because the present Minneapolis Board of Education—after duly considering the matter, presumably in all its important bearings—gave no satisfactory assurance that my services were longer desired here.

It is true that from the beginning of my service up to January 1 of this year the Board of Education gave most sympathetic consideration and loyal support to all important plans and policies that I have advocated; and I wish formally to record here my deep appreciation of the farsighted, generous, and unselfish work of the Minneapolis Board from 1914 to 1916 inclusive, and to express the belief that the public will yet render to that Board and to most of its individual members something of the gratitude that their splendid services merit. It is also true that scores of organizations throughout the city numbering thousands of members have formally approved both the comprehensive building and the educational programs for whose formulation I am largely

responsible, and that while I was in Cleveland carefully considering the course that I ought to take I received from a large number of Minneapolis citizens of the highest standing and representatives of city-wide interests and organizations sincere and urgent appeals to continue in the work here. These appeals and hearty approval of my efforts which they contain fill me with gratitude and pride beyond expression. I realize fully what such support means—it is absolutely essential to any considerable success.

But I cannot ignore the fact that organizations and individuals—no matter how numerous or of how high standing—are not the official representatives of the educational interests of the city. The responsibility for those interests the people have deliberately entrusted to the Board of Education. Far be it from me to assume that the three members of the present Board who are either opposed to my continuance in service or are in too much doubt concerning the advisability of such continuance to express themselves definitely, misrepresent the wishes and wisdom of the people that elected them as their representatives, two of them by votes far larger than were ever before given to a candidate for the office of school director.

These three directors—lacking only one of a controlling majority of the Board—had already, in the very first meeting of the Board in which the two last elected took their seats, given unmistakable evidence of embarking on a course of determined opposition to fundamental policies of administration for the inauguration of which I had been responsible.

The frank consideration of these facts—the beginnings of determined and calculated opposition evident in the first meeting of the newly organized Board, and the opposition to, or the refusal of even general approval of, the superintendent's service as deliberately expressed by three directors, coupled with a keen sense of the power and responsibility rightly entrusted to the Board of Education, as the one official representative of the whole people with whom the superintendent must deal, allowed me to reach no other decision than that my service in Minneapolis must terminate—a decision that would have been inevitable in the near future, had no other position offered itself.

While I shall leave Minneapolis with reluctance and regret, I shall take away a wealth of altogether pleasant personal and professional memories of the three most interesting and happy years of my life.

Relations of Boards of Education to Superintendents

The following quotation from the *Boston Transcript* serves to call attention to an important series of conferences and to emphasize the fact that public consciousness is being aroused to the recognition of the gravity of the new problems of school organization.

The Massachusetts Normal Art School was, on January 5, the scene of one of a series of conferences being held throughout the state by members of school committees

and superintendents, in an effort to achieve some sort of careful and efficient administration of the public schools. For, strange as it may sound to many, there is a condition of confusion between the functions of the school superintendent and the school committee. No definite ruling as to the respective duties of these officers has been worked out, and it is for the purpose of establishing uniform practice throughout the commonwealth that the general education service of the state board of education is holding these conferences, eleven in all.

The cause of the confusion existing today may be seen in the development of the office of school superintendent. Years ago the affairs of a town's schools were administered by a school committee, the members of which acted largely as individuals, each assuming charge of a district. The result of this method was that the children of no two districts ever had the same advantages, the quality of the schools always depending upon the committee member's intelligence and interest. As the inefficiency of this system became apparent, individual towns hired men who acted as a co-ordinating head and centralized the work of conducting the schools. The opportunities made possible by the new superintendents impressed the legislature so favorably that each town was required to employ a superintendent.

Then the troubles of the school administrators began in earnest. Many towns complied only with the letter of the law, feeling that "a superintendent was all right if he only let the schools alone." No one had a clear idea as to what the relations between the superintendent and the school committee should be, or what were the respective duties of each. The problem of reconciling the office of the superintendent with the committee became a large and difficult one, and the conferences this year, as well as a series held last year, are efforts toward the solution of it.

The spirit of those present at the conference seemed to favor the superintendent being considered as the executive officer and the committee as the legislative body. Nevertheless, whatever the conferees may themselves think or decide, the fact remains that the relationship between superintendent and committee is not clearly defined. As was said by Deputy Commissioner of Education

Robert O. Small, the board of education is an executive body and not legislative, and it devolves upon the legislature to establish the absolute duties and settlement of relations of superintendents. The increasing cost and enlarging scope of public education make a more efficient administration of the public schools imperative, and this cannot be accomplished when wide differences of opinion exist as to just who is the administrator. The legislature should promptly and clearly define the status of all officers connected with the schools. It should not leave this matter, as legislatures so often leave others, to be settled by someone else. Legislatures have a habit of passing measures and then letting someone else get out of the ensuing difficulty.

The general education service has issued a pamphlet with the purpose of presenting approved procedure in school administration, establishing uniform practices throughout the commonwealth, and defining the individual and joint activities, duties, responsibilities, and powers of the several administrative officers in a public-school system. A copy of this pamphlet should be placed in the hands of every member of the general court, with the urgent request for action which will make the recommendations law.

The General Education Board makes the following announcement under date of January 19:

A New Experimental School The General Education Board announces that it will provide Teachers College of Columbia University with the funds necessary to establish and conduct a school for the purpose of constructive work in the reorganization of elementary and secondary education. The keen and extended discussion of President Eliot's paper on "Changes Needed in Secondary Education" and Abraham Flexner's paper on "The Modern School" have convinced the General Education Board of the importance of supporting a school conducted in co-operation with Teachers College for the purpose of working out by cautious experimentation suggested improvements in the curriculum so that it may be better adapted to the needs of modern life than is the curriculum now in common use.

The organization of the school under the auspices of Teachers College insures the careful study of every experiment by the faculty of Teachers College, many of whom are among the ablest critics of educational procedure in the world. This arrangement will make for carefully considered and continuous progress toward the goal for which the school is established. A number of

colleges have already expressed interest in the undertaking and it is hoped that academic co-operation will be obtained.

In the curriculum, modern languages will be stressed and experiments will be made with a view to determining what methods of teaching English, French, and German give the most substantial practical results. New methods of teaching literature, history, and civics will be tried, and in this connection efforts will be made to ascertain whether the important ancient classics cannot be effectively used in translations. Latin and Greek as languages will not be taught in the school. Science, industry, and the domestic arts will be prominent throughout the school, and increased attention will be given to music, drawing, and art. The subject of mathematics will receive special consideration in the hope of working out a rational course of study which connects the study of mathematics with its use, and which also makes adequate provision for those who have special ability or desire for this subject. Organized recreation, play, and games will be provided for. Constant efforts will be made, by means of individual, class, and school excursions, by means of pictures, lantern slides, charts, maps, shop and laboratory, special reading matter, and discussions, to give the pupils sufficient contact with their natural, industrial, social, economic, vocational, and domestic environment so as to derive the basis for their school work from real situations and thus make school work constantly real to them. The school will frankly discard that theory of education known as "formal discipline" and will undertake to secure training through the careful and thorough study of subjects which are in themselves valuable. It is believed that a much more effective discipline can be thus secured.

The director of the school will be professor Otis W. Caldwell, now Head of the Department of Natural Sciences in the School of Education of the University of Chicago. Before becoming a member of the faculty of the University of Chicago, Dr. Caldwell had experience as teacher and supervisor in elementary schools, high schools, state normal school, and college. He is the author of several important books dealing with the subjects of botany and general science for the use of secondary schools, and has also edited a leading textbook in agriculture for secondary schools. He has been for years one of the most active and effective workers in adapting science subjects to elementary- and secondary-school uses. In addition to his books he has published numerous papers dealing with the educational aspects of science work, and has been constantly in demand as a speaker on educational programs. Recently he has participated in the Gary survey which is being conducted by the General Education Board and he is just completing a monograph on the teaching of science in the Gary schools. In addition to his position as director of the school Dr. Caldwell will become a professor of education in Teachers College. In recruiting the staff, the country will be searched for able and resourceful teachers in all the different fields of elementary and secondary education.

It is expected that the school will open with part of its classes in the fall of 1917. Both boys and girls from six years of age up will be admitted, though they will not necessarily be in the same classes in all subjects. It is expected that the tuition fees will be moderate and that there will be a number of free and partial scholarships. Subject to the authority of Columbia University and Teachers College, the general management of the school will be vested in an Administrative Committee composed of James E. Russell, Dean of Teachers College, chairman, and the following additional members: Otis W. Caldwell, V. Everit Macy, Mrs. Villard Straight, Felix M. Warburg, Arthur Turnbull, appointed by Teachers College, and George E. Vincent, Wickliffe Rose, Charles P. Howland, and Abraham Flexner, appointed by the Chairman of the General Education Board.

The inauguration of this experiment under the immediate direction of Professor Caldwell will be of especial interest to many of the readers of the *Journal* who know Professor Caldwell intimately because of his work and wide influence in the introduction of science into the school curriculum. Professor Caldwell has given his co-operation for many years to the work of this *Journal* and the other activities of the School of Education of the University of Chicago. His withdrawal from the University will mean a distinct loss in the way of both technical contributions and personal enthusiasm to the student body connected with the School of Education.

The new experiment which Dr. Caldwell is to organize will undoubtedly answer in a positive way many of the criticisms of present-day school practices which arise in the minds of all careful students of the educational situation. Emphasis ought to be laid, in considering this announcement of the new school, not so much on the negative statements which have attracted a great deal of attention in the public press, but rather on the positive elements in the announcement. The various newspaper comments and editorials which have appeared give great emphasis to the fact that the classical languages are to be omitted and formal instruction in grammar and other subjects is to be curtailed. A careful reading of the announcement itself will show that it is the positive elements of the program that are uppermost in the minds of those who are organizing the school. It is not so much a matter of dropping subjects as it is a matter of organizing the course of study so as to

give more training along productive lines. Mathematics is, indeed, to be worked over with a view to eliminating its unnecessary elements, but this working over is not primarily with a view to reducing the subject, but rather with a view to making it more appropriate to the lives of school children. Latin literature is to be included, though Latin language is omitted.

One feature of the experiment which is especially to be commended is the determination to scrutinize the results of the experiments by those scientific methods that are now being worked out so fully by careful students of education. The development of this work in connection not only with the Board of Education itself, but also with Teachers College as an institution which can contribute scientific criticisms for the work, makes a fortunate combination. As the announcement points out, the members of the staff of Teachers College can bring to the new institution supervisory and scientific support which the experiment will certainly need if it is to test its results and make a definite showing for reform, which has often been lacking in schools which merely start out with the idea of changing the course of study.

The new school is to be welcomed as one further addition to the institutions which in various sections of the country are working carefully and systematically toward an enlargement and revision of the course of study under scientific supervision.

Federal Subsidies for Vocational Education

On January 9 the House of Representatives passed by a unanimous vote the Smith-Hughes bill. The form in which the House passed this bill differs somewhat from the form in which the bill was passed by the Senate. The bill therefore goes to conference and will not be in its final form until the matters of difference are worked out between the two branches of Congress.

The Senate bill provides for a board of cabinet officers with an advisory board of specialists to administer the funds, while the House bill provides for a separate federal commission with full power of administration. Both bills provide for a generous appropriation, beginning with $1,700,000 and increasing in succeeding years until a total amount of $7,200,000 is reached nine years hence. Of

the initial appropriation, $500,000 is to be used for salaries of teachers of agricultural trades, distributed to the states according to their rural population. A like sum is to be paid for the salaries of teachers of industrial trades, distributed according to urban population. A third sum of $500,000 is to be devoted to the training of teachers of these two classes, and $200,000 is appropriated to pay salaries and expenses of the administrative board.

The bill provides that the various states shall supplement grants made by the federal government and shall develop a form of organization suitable for the administration of these funds. The state organization is to consist of a board which can co-operate directly with the federal board.

One Motive for Organizing Junior High Schools

The following clipping from the *Democrat* of Davenport, Iowa, is repeated at length because it illustrates one of the non-educational motives for reorganizing the school system. That there are legitimate pedagogical methods is briefly noted at the end of the article.

The intermediate *school system*—whatever it involves—was unanimously endorsed by the Davenport Board of Education at its regular monthly session Monday afternoon.

The question will be put to a vote next March, the plan being three modern schools—one in the eastern section of the city, one in the central, and one in the western section—at an estimated cost of $300,000, or $100,000 a building.

This figure is exclusive of the cost of sites.

About 1,500 pupils would be benefited.

Briefly, the intermediate school system, adopted by over 300 cities in the country, is this: Pupils from the seventh and eighth grades of the public schools and scholars from the ninth grade, or first-year high school, would attend the intermediate school in their district. There would be a redivisioning of the school districts, three of them being laid out.

This phase of the project is considered all-important, for it would relieve the alarming congested school conditions now existing in Davenport. The Board is confident that within a short time the congestion will become so acute that either one of two things must be done. The new system must be adopted or additional schoolhouses be erected and additions be added to the old ones. When it is recalled that only three schoolhouses have been erected since 1900 and that the first one ever built here was erected in 1845, the public can easily see the inadvisability of the latter plan. The Board looks at the situation in

this light. The three schools erected after 1900 are: Buchanan in 1904, Johnson in 1910, and Grant in 1912. The first school to be built was Adams, in 1854.

The board is alarmed over the large enrolment at the various grammar-grade institutions as well as at the high school.

In all, there are about 1,050 children in the seventh and eighth grades of public schools in the city who would be sent to the intermediate school in their respective districts.

The high school holds about 360 first-year pupils. In round figures, about 1,500 public-school children in Davenport would attend the new schools. When it is considered that this would greatly relieve the congestion and that the rooms formerly occupied by the intermediate school children would be turned over to those still in attendance at the old buildings, thus giving more room for all, the question should be received with great favor from every angle.

While the bonds would all be voted on at one time, the Board states that it would not be necessary to build all three intermediate schools at once. One could be erected next year, another the year following, and the third the year after that. The intermediate schools would be built to house more children than the figures above indicate. This contingency was thoroughly discussed by the Board, it developing that the school attendance, on account of the compulsory educational law, was bound to increase from time to time. When the schools became full, additions could be erected.

The school district of the city is five miles long.

Superintendent Smart, who has charge of the intermediate-school question, explained the situation, using a chart of the city. Each member of the Board was provided with a tabulated list of all details regarding the grammar schools. Mr. Smart laid stress on the point that the new system would stimulate education. He asserted that a child attending such a school would, at the termination of his eighth-grade work, go at least partially through the high school by reason of the environment of being associated with high-school pupils who would get their first year's work at the intermediate school. Each school would accommodate about 700 pupils.

These cities are among those using the new system: Grand Rapids, Mich., Dayton, Ohio, Columbus, Ohio, Detroit, Mich., Camden, N.J., Oklahoma City, Springfield, Mass., Quincy, Ill., Topeka, Kan., Dallas and Lincoln, Neb.

Meeting of School Efficiency Officers

This *Journal* has been asked to publish announcements of certain meetings and educational opportunities in connection with the meeting of the Department of Superintendence at Kansas City. One of the relatively new features of this meeting is the program of the National Association of Directors of Educational Research. Last year this

organization was brought together for the first time, and included the professional officers connected with city departments of education and state departments of education who are engaged in statistical studies and other forms of educational research looking toward a more complete standardization of school work.

The chairman of the meeting for this year asks that the following program be given as wide publicity as possible:

PROGRAM OF THE NATIONAL ASSOCIATION OF DIRECTORS OF EDUCATIONAL RESEARCH, KANSAS CITY, MISSOURI, MARCH 1, 1917

WALTER S. MONROE, Bureau of Educational Measurements and Standards, Kansas State Normal School, Emporia, Kansas, *Chairman.*

"The Problem of Measuring Ability to Read Silently."—S. A. COURTIS, Supervisor of Educational Research, Detroit, Michigan; H. W. ANDERSON, Bureau of Educational Research, Dubuque, Iowa.

"Correlation between Ability to Think and Ability to Remember, with Special Reference to United States History."—B. R. BUCKINGHAM, Educational Statistician, State Board of Education, Madison, Wisconsin.

"Organized Effort in Educational Research in City School Systems."—J. P. O'HERN, Rochester, New York.

"Fundamental Problems of Educational Research from the Point of View of a State Bureau."—CHARLES FORDYCE, Nebraska Bureau of Educational Measurements, University of Nebraska, Lincoln, Nebraska; F. J. Kelly, Bureau of School Service, University of Kansas, Lawrence, Kansas; H. A. BROWN, Bureau of Research, Department of Public Instruction, Concord, New Hampshire.

The Elementary School of the University of Missouri

Professor J. L. Meriam, of the University of Missouri, asks that an announcement be made with regard to the opportunities offered to those who wish to visit the elementary school conducted in connection with the University of Missouri. His letter contains the following invitation to all who are interested in the work of this school:

Visitors are indeed always welcome at this school and we have a great many of them. For the sake of accommodating visitors who might find it convenient to be here the Saturday preceding the National Education Association meeting or the Saturday following, we have arranged to hold school on Saturday, February 24, and Saturday, March 3, as well as during the week.

College Teachers of Education

The College Teachers of Education meet on Monday and Tuesday with a program which includes papers dealing with scientific investigations and papers dealing with administrative problems arising in connection with the organization of courses for teachers.

Dinner of the University of Chicago.

Announcement was made in an earlier number of the *Journal* of the Chicago dinner which will be held on Tuesday evening, February the twenty-seventh, at the Hotel Muehlebach. Graduates and former students of the University of Chicago are requested to take notice of this meeting. Many of them will have received personal letters containing the announcement. The notice is here repeated for the purpose of reaching any who may have been accidentally omitted from the lists.

EDUCATIONAL WRITINGS

There is usually little that is novel to comment upon in a new "method" or "system" of penmanship. One "method" uses copy slips, another copy sheets. One uses one style of alphabet, another a style the same in fundamentals, but different in a few minor details. One uses a slant of 55 degrees, another a slant of 60 degrees. And so one might extend the list of minor details of method which constitute the cornerstone of penmanship systems.

In *Penmanship, the Kirby Rhythmic Method*[1] there is more reason in the designation "method." Counting, or some method of indicating time, has been used in teaching writing for a long time and, in fact, is one of the important elements of most modern systems. The novel feature of the Kirby method is the grouping of the counts so as to bring the first count, which receives the accent, always on the first stroke of the letter. In this way each letter is marked off from the preceding and succeeding letters. The individual letters are characterized as written by two-part, three-part, or four-part time, according as they are given two, three, or four counts. Thus *i*, *e*, *a*, *n*, and *o* are written in two-part time, *m* and *w* in three-part time, and capitals *B* and *T* in four-part time. The announcement is made that the author has prepared phonograph records to keep the time for writing the various exercises.

Rhythm has been shown by experimentation to be an important characteristic of good writing, and this elaboration of the principles in teaching is a step in the right direction. The success of any such attempt will depend in large measure upon the choice of the correct rhythm for each letter or combination of letters. It seems to the writer that the time which is chosen for some of the letters is not the best. This is a question to which practical trial will give the answer.

F. N. F.

[1] *Penmanship, the Kirby Rhythmic Method.* By J. Albert Kirby. New York: Newson & Co., 1916. Pp. 133.

Under the editorial supervision of Professor Whipple three monographs have appeared dealing with the problem of formal discipline. The first of these[1] reports experiments on elementary-school children and refers to two problems that are of general educational importance. The first is the problem of formal discipline already referred to; the second is the problem of sense training. Dr. Wang gave a group of elementary-school children practice in the discrimination of vertical lines. He tested them before and after this practice in the discrimination of pitch, color, and size. He found that the transfer was very slight and that the amount of improvement recorded was very small. He then entered upon a second series of experiments in which he tested the ability of these same children to discriminate letters and to mark words containing various combinations of letters. Here he found the improvement to be very rapid, showing that the training of the senses as such is relatively slow and difficult, while the training of ability to use impressions received through the senses is very much more rapid. He also found that in this second case the transfer of training was very much more complete than in the first experiment. His conclusion is that transfer depends primarily upon the adoption of better methods of intellectual work and on the consciousness on the part of the subject that he is cultivating methods which can be transferred. In the first experiment the pupils did not know how to improve and they did not improve a great deal. Consequently transfer was very slight. This emphasis on the fact that transfer is not an absolute matter which takes places in the same degree for all sorts of mental functions has been coming out more and more clearly as experiments in psychology have gone forward. Transfer, like every other educational result, must be aimed at directly and must be consciously sought or it will not be achieved.

The second monograph[2] attacks the problems of formal discipline in the high school. We shall not attempt to go into the details of the investigation. They are very similar to the edu-

[1] *The General Value of Visual Sense Training in Children.* By Chang Ping Wang. Baltimore: Warwick & York, Inc., 1916. Pp. 85.

[2] *The Doctrine of Formal Discipline in the Light of Experimental Investigation.* By Nellie P. Hewins. Baltimore: Warwick & York, Inc., 1916. Pp. 120.

cational experiments that have been repeatedly tried in other fields. The interesting outcome in this particular case, however, is that, the experiments being more carefully and thoroughly worked out, the author discovers not only that the problem of discipline can be answered by such tests, but also that it is a matter of crucial importance to discover whether the pupils are themselves engaged in better methods of intellectual activity before or after the tests. Indeed, the comments of both the editor and the author are of significance. We quote therefore, first, a paragraph from Professor Whipple's introduction:

> Not long ago, as a result of the earlier experimental studies, it was felt by many that transfer of training was present either not at all or at least in such slight amounts as to be negligible. More recently, the pendulum has certainly swung in the other direction. Experimentation has been directed less toward searching for the existence of transfer than to searching for the kind of transfer present and the conditions under which it appeared. One factor in this shift of attack upon the problem as a whole has been the conviction that experimentation conducted upon children still in their formative years and under the more natural conditions of their everyday life might very well reveal the presence of formal training that could not be demonstrated with adults in the psychological laboratory.

Professor Whipple is undoubtedly right in saying that the important problem before us at the present time is not the mere determination of whether transfer takes place or not, but the determination of the conditions under which this transfer takes place.

After summarizing her results, Dr. Hewins makes the following statement, which is very significant because it gives a summary of the evidence in favor of transfer and also, in its last paragraph, points out with perfect clearness that intensive application is an important element in transfer. If this application is lacking, the results of the test will be of a type entirely different from those which are secured when it is present. The whole drift of these results, therefore, is to emphasize the method of intellectual procedure on the part of the pupil who is being tested.

> It is evident from these general summaries and comparisons that the practiced pupils have done better in the second and third series than the unpracticed. The question difficult to solve is: "What is the cause?" No doubt growth,

familiarity with procedure, benefits of classwork and study, and desire to excel, have all contributed their share toward the gain, but these factors may have aided both sides equally. We have no means of telling. Then why the difference?

Judging from the division of the practice groups, the better pupils in these tests were on the unpracticed side. While the class term marks showed the better boys to be on the unpracticed side, the contrary was true as far as the girls were concerned. The March rating showed the reverse condition of affairs. Very little significance can be attached to class marks as denoting general intelligence or superiority, because so many extraneous factors enter in.

Considering Table 3, we would naturally expect both practiced boys and girls to earn in the second series a bigger gain than their opponents in the biological tests; but how shall we explain their greater efficiency in the non-biological tests, other than to ascribe it to the effects of the practice series?

Feeling that the balance of arguments and scientific proofs was against formal discipline when this investigation was begun, I am forced by the results obtained to admit that in this experiment the proof seems to be on the affirmative side.

A valuable lesson, I think, can be drawn from one phase of this investigation. By consulting the tables and summaries, it will be seen that sometimes one division does not fall in line with the general trend, but that a larger number outweighs the negative and shows positive results. This would warn us against drawing conclusions from experimentation with too few subjects, as has been done in several of the investigations cited in the historical part.

As can be seen by the averages per test of Tables 2 and 4, the boys have done better than the girls, although the curves of the practice series seem to indicate that the girls are superior in that series. This may be ascribed to the boys' general lack of intensive application to uninteresting or monotonous work, but it is likely that greater effort was put into the shorter tests of the three series.

Finally, the third of these monographs,[1] prepared by Dr. Rugg, is significant for the general student of education quite as much because it deals with mature students as because of the positive results which it gives in regard to mental transfer. Dr. Rugg tested college students who were taking a course in geometry. His conclusions are summarized in the two quotations which follow:

The study of descriptive geometry (under ordinary classroom conditions through a semester of 15 weeks) in which such natural and not undue consideration is given to practice in geometrical visualization as is necessary for the solution of descriptive geometry problems operates:

[1] *The Experimental Determination of Mental Discipline in School Studies.* By Harold Ordway Rugg. Baltimore: Warwick & York, Inc., 1916. Pp. 132.

1. Substantially to increase the student's ability in solving problems requiring the mental manipulation of a geometrical nature, the contents of which are distinctly different from the visual content of descriptive geometry itself.

2. Substantially to increase the student's ability in solving problems requiring the mental manipulation of spatial elements of a slightly geometrical character, i.e., problems utilizing the fundamental elements of geometry (the point, line, and plane), but apart from a geometrical setting, and in such form as to offer no geometrical aids in solution.

3. Substantially to increase the student's ability in solving problems requiring the mental manipulation of spatial elements of a completely non-geometrical nature, i.e., problems in which the straight line and plane do not appear in any way whatsoever.

4. The training effect of such study in descriptive geometry operates more efficiently in those problems whose visual content more closely resembles that of the training course itself, i.e., in those problems whose imagery content is composed of combinations of points, lines, and planes, and *in which the continuity of the manipulating movements approaches the continuity of those in the training course.*

The possibility of one "disciplinary outcome" in a specific school subject, i.e., ability in the mental manipulation of spatial elements, has been established in this investigation. The writer believes that formal school subjects find a large part of their disciplinary value in the developing of this ability to analyze the problem and to organize a method of procedure; to build up ideals, or to organize a method of attack. But it is undoubted that they also make habitual, or automatic, many specific constituents of the complex abilities that function in many complex situations. The successful habitualizing of these specific reactions is accentuated by the building up of a background of fundamental attitudes of orientation, or familiarity with the content of the situations to be met. It may be increased by the accompaniment of practice in extending the range of attention.

Taking together the three studies which have been thus briefly summarized, there can be very little doubt that the evidence which they furnish contributes very emphatically to a view with regard to formal discipline which is probably much more wholesome than the earlier view or the reactionary view which has been common in recent years. It is not true, as some are supposed to have believed a generation ago, that training in a given subject spreads equally in all possible directions; nor is it true that training in a given subject is incapable of influencing other facts in mental life. The whole problem is one of right methods of intellectual procedure. The training which is derived from any given subject will depend quite

as much on the adoption of right intellectual methods as upon the subject-matter of training. Desirable training does not issue automatically from all kinds of school work, but it shows itself just in the degree in which intellectual work has been carefully planned and carried out according to productive methods. The problem for the practical teacher, therefore, as well as for the student of educational principles is to discover those methods of training which shall contribute to transfer rather than to assume that transfer is present or to deny that it can take place.

Judging from the eagerness exhibited in all quarters for information about the junior high school, there will be a wide circulation for two pamphlets[1] which have recently been issued. The first of these is a statement in brief of the historical background of the junior-high-school movement, of the defects in our present system of organization, of efforts directed toward improvement, of arguments for and against the new institution, and so on. There is a bibliography at the end. There is a statement of the kind of curriculum which such a school should adopt. The pamphlet, as indicated in the footnote, is issued as a bulletin of Middlebury College and can be had by addressing the college.

The second pamphlet evidently has as its chief purpose a definition of the junior high school. The statements of various authorities are quoted and prominence is given to the following definition:

> A Junior High School is a school made up of the upper grades (usually the seventh and eighth) of the elementary school and the lowest grade (the ninth) of the secondary school, and organized after the general plan of the secondary school as regards curriculum, nature, and method of the recitation, instruction, and supervision.

It is the belief of the writer of this note that the time has not yet arrived for formulating a definition of the junior high school. The school systems of this country are in a period of experimental readjustment. Let the experiment go forward. There are many observers who are restless because everything seems to be unformed

[1] *The Junior High School.* By Frank E. Howard. Middlebury College Bulletin, September, 1916. Pp. 43.

The Junior High School. By Ernest P. Wiles. Boston: D. C. Heath & Co., 1916. Pp. 24.

and chaotic. There is, to be sure, some ground for anxiety in the fact that some schools have seized on the name, but are empty and formless in substance. There will be overradical systems where the change in the seventh and eighth grades will be made without due consideration of all that is involved. But out of this kind of experimentation a democracy issues with all its new products. We must be patient and not settle on final definitions until we have tried many different modes of adjustment. The present pamphlet should not be taken too seriously as a definition. It is rather one of the preliminary arguments in favor of a certain type of organization. The institution for which it argues appears as one among many different types of junior high school.

The annual report of Superintendent Bliss[1] contains two items of general importance which raise it above the level of ordinary interest. For four years Mr. Bliss has kept a careful record of the health in open-air schoolrooms and in ordinary rooms. His results and conclusions are stated in the following quotation:

> In the report of last year were given certain facts with respect to open-window classes, indicating that the assumptions which had been made of their value were not justified, but the experiment was continued for another year, and the records of three classes operated on the open-window plan were checked by those of three control classes. The results appear in the accompanying tables:
>
> If these facts are compared with those given in the 1915 report, it will be seen that they point to the same conclusion, namely, that children in well-ventilated rooms maintained at a normal temperature are actually in better health than those in low-temperature rooms. When a test is carried on for four years with different grades and in different buildings, and when the results, without exception, point to the same conclusion, there seems no escape from that conclusion. Accordingly, no open-window classes will be maintained during the coming year.

The second matter worthy of comment is the careful analysis which is made of the increases in population in the various districts of the system for a period of more than forty years, with a view to

[1] *Report of the Board of Education of Montclair, N.J., for the Fiscal Year Ending June 30, 1916.* Pp. 68.

determining the policy of the city in its future program for the distribution of school buildings. The study makes it possible to lay out a program for the system looking forward as far as 1940.

In many communities such a program would be invalidated by the changing conditions which cause fluctuations in the distribution of population, but it is more than likely that school boards would find their plans justified rather than overthrown in a

HEALTH RECORD, 1915–16

	II. Open Window		II. Control Class	
	No. Children	Days Absent	No. Children	Days Absent
Colds, etc.	23	176	19	127
Indigestion	5	8	6	9
Contagious diseases	1	14	0	0
Other causes	24	148	25	137
	III. Open Window		III. Control Class	
	No. Children	Days Absent	No. Children	Days Absent
Colds, etc.	26	128	12	89
Indigestion	20	46	4	5
Contagious diseases	3	19	1	28
Other causes	24	120	13	70
	IV. Open Window		IV. Control Class	
	No. Children	Days Absent	No. Children	Days Absent
Colds, etc.	26	113	22	72
Indigestion	7	20	13	20
Contagious diseases	0	0	4	44
Other causes	27	127	25	106

great majority of cities if careful studies like this were made. Telephone companies have long since given up building their trunk lines on mere guess. They make surveys of the population. These surveys go into such details as the probable class of homes or business houses that will be located in various sections. Mr. Bliss's study illustrates the application of progressive, scientific methods to the solution of social problems.

Greene County is in southwestern Indiana. A survey[1] of this county was made and reported as a thesis for the Master's degree in education at Indiana University.

The survey reports general facts regarding the county as ascertained from the census and from the histories of the county. It reports on buildings, equipment, training of teachers, ages and progress of pupils, and courses of study on the basis of answers collected from school officers to series of questions sent out by the author of the thesis.

The method of comparison is employed in bringing out the characteristics of different towns. One has a high average attendance of those enrolled; another is much lower.

Descriptive summaries are given in many matters, as indicated in the following quotations:

> Water is supplied to 33 per cent of the schools by open springs, 64 per cent are supplied by wells, and 3 per cent by cisterns. Very few schools, less than 4 per cent, have had the water tested recently. Very little precaution is taken to prevent the contamination of the water either in the springs or in the well.
>
> In 10 per cent of the cases the supply of water was located on the school ground, 50 per cent had water less than one-fourth of a mile away, while 40 per cent had to carry water more than one-fourth of a mile. Forty-seven per cent of the schools use the common drinking cup, 51 per cent reported individual drinking cups, and 2 per cent fountains.
>
> Only 15 per cent of the schools were using paper towels, while in 33 per cent of those using cloth towels the teachers reported them as in an unsanitary condition. The percentage was probably greater.
>
> There were not any trees on 25 per cent of the grounds, 25 per cent had fewer than four trees each, and the other 50 per cent had four or more trees each. Many of the schools have been established for many years, yet do not have a tree near. There is no reason why all should not have good shade trees, since they may be had for the effort of planting and caring for them. In many places they are needed badly.
>
> There were 172 teachers in the grades of the township schools in 1914–15. Of these 74 per cent were high-school graduates and all of them had had twelve or more weeks of professional training, 35 per cent had had more than twenty-four and less than thirty-six weeks, and 35 per cent had had more than thirty-six weeks of college or normal training. During the same year the towns and cities had 61 grade teachers, 70 per cent of whom were high-school graduates. Fourteen per cent had had less than twelve weeks of college or

[1] *Educational Survey of Greene County, Indiana.* By Daniel C. McIntosh, Worthington, Indiana. Pp. 110.

normal training, 28 per cent had had between twelve and twenty-four, leaving 58 per cent with thirty-six or more weeks of college or normal training.

The survey is deficient in one most important respect. There are no tests which show the character of work done by the pupils. The result is that the survey is blind in its recommendations so far as these relate to the actual work of the classroom. The author, furthermore, makes the mistake of not recognizing this limitation and makes recommendations on matters which are not otherwise covered in his survey. For example, he includes in his final list of recommendations the following paragraph:

> The schools are attempting to teach too much and not giving enough time to the essentials. More time is needed in language work to the fundamentals and more simple forms of expression. Teach the fundamentals in arithmetic better, but vitalize it by connecting the work with everyday problems, not being afraid to omit some of the work in the cube root, complex fractions, and some of the other useless things. Mental training can come from the more simple and practical things as well as from the more complicated and impractical problems. The first-hand problems of every farm and home should form a part of each school curriculum.
>
> The teaching of reading could be improved in many of the schools. Reading should come from a desire to know or find out something and it could come from a desire to know more about nature much easier than from something less familiar. The desire to know will help keep the interest in phonics, word drills, and discussions, which must come before good oral reading. While it is not expected that all become good oral readers, more satisfactory results would come if the mechanics and thought were mastered before attempts were made to read orally.
>
> The same might be said of spelling. Too many words are attempted and as a result not even the most common ones are mastered. Too many teachers assign the next ten words, then examine the children on them next day and pass to the next ten. No attempt is made in many schools to teach the children how to spell or to study the uses and relations of words. Words that are of use should be emphasized and time given to make each a part of the child's vocabulary.

The Iowa State Teachers' Association has issued a pamphlet[1] in which the work of its committee on the elimination of unnecessary subject-matter in the school curriculum is discussed in some detail for each of the subjects of the course of study. This Iowa com-

[1] *Report of the Committee on Elimination of Subject Matter.* Published by the Iowa State Teachers' Association, 1916. Pp. 52.

mittee is directly related to the committee of the National Education Association which has been working on economy.

The report in hand deals in specific details for each of the subjects and gives in every case a brief bibliography of discussions on each of the school subjects. The pamphlet is suggestive in that it deals thus specifically with the school problems.

A series of publications giving the courses of study in various cities indicates that there is a great deal of activity in school systems in the reorganization of the various subjects of instruction. From Sioux City there comes an elaborate volume[1] of 256 pages which outlines a course in history for the grades. This course begins at the beginning of the child's school experience. It includes a body of material which could in the earlier years be classified under either geography or nature study quite as well as under history. For example, the first topic to be dealt with is family life. Something about the organization of the home and the various people who are concerned in home life is taken up for the purpose of enlarging the experience of these beginners.

The conception of history which is implied in such a beginning of the historical course is the broad social conception which will ultimately lead in the later years of the course to a treatment, not only of the political history of the country, but also of its industrial history. Throughout the pages of the volume this spirit finds frequent expression.

The course in history, as outlined, is much more elaborate than that followed in most elementary schools. There is a large amount of material which refers to ancient history and to the mediaeval period which ordinarily is not touched upon in elementary-school work. For example, to take a single item, routes of trade among the mediaeval nations are discussed with some reference to their geographical correlation.

The book is illustrated by half-tones of dramatic representations, which were worked out in the course of the study by the children in the various grades. This dramatization of history was exhibited before certain teachers' associations and the children were thus

[1] *Progress.* Print Shop: Ye Highe Schoole, Sioux City, Iowa, 1916. Pp. 256.

helped to make vivid their ideas of each of the different periods covered in the course.

There can be no doubt that the elementary course is at the point of enlargement so as to include more of the type of social material which is here given in detail. The question of adjusting the rest of the course of study so as to include this material will suggest itself to many readers as constituting an obstacle to the adoption of a course of this kind. It is, however, perfectly clear that obstacles of this type ought to be removed in order to bring into the curriculum this highly interesting social material. Children are interested in this type of work and they gain enormously in breadth of experience. The material also furnishes an opportunity for contact with books of reference and for the cultivation of the imagination as well as for training in routine of reading which makes it much more productive than the formal material which has in many cases served for the reading class and for study in the elementary grades.

A second contribution[1] to the study of the curriculum is a summary from the Wichita public schools of the elementary courses in various subjects. English is treated in a separate pamphlet much more elaborately than the other subjects. A very brief outline pamphlet gives an account of what is to be done in these schools in history, geography, community civics, and nature study. No special comment needs to be made on this composite pamphlet. It is merely a skeleton outline of the course. A bibliography is furnished for the various subjects which will be useful to teachers.

The English course is very much more detailed and will be welcomed by elementary teachers because of its rich body of references of reading material. One gets the impression as he reads through the course of study that the reading material which has been selected has back of it no fundamental principle of selection. Undoubtedly the experience of elementary teachers has operated to eliminate

[1] *Elementary Course of Study in English for the Wichita Public Schools.* Published by the Board of Education, 1916. Pp. 172.

Elementary Courses of Study in History, Geography, Community Civics, and Nature Study for the Wichita Public Schools, 1916. Pp. 67.

many of the selections which have been tried and have been found to be too mature or too complicated for the use of the different grades. From the point of view of a new teacher, or especially from the point of view of one outside of a school system, it would seem highly desirable that courses of study should discuss sufficiently the principles of selection which are adopted in these courses, so that the teacher who wishes to depart in any measure from the prescribed routine in the course will know how to go about the collection of reading-matter that will comport in character with the reading-matter suggested. Not only ought courses of study, therefore, to lay down the routine that is to be followed, but for the sake of the system which is to use such course of study, it would seem advantageous to discuss briefly the principles of selection and presentation.

Such a criticism as this is offered, not because the Wichita course in English is a conspicuous example of failure to comply with this demand for a statement of general principles, but because an elaborate course of this type will pass through many hands and will undoubtedly influence the organization of similar courses in other cities. If there is to be genuine co-operation in the building up of such courses, such co-operation will require a clear background of theory.

Judging from the number of books which have recently appeared for the use of parents, there must be a very widespread interest on the part of intelligent parents in the needs of their children. Indeed there can be little doubt that a number of the movements of reform in modern education have spread rapidly just because there is an intelligent reading public which is outside of the schools themselves. The addition of another volume intended for this intelligent reading public is therefore a matter of interest to school officers as well as to the parents to whom the book is addressed.

The volume on *Sons and Daughters*[1] is written in a concrete, vivid style, with many illustrations and striking phrases. It brings out the general principle of individual differences in a very impressive

[1] *Sons and Daughters*. By Sidonie Matzner Gruenberg. New York: Henry Holt & Co., 1916. Pp. 328.

way. It calls attention to a number of the topics that have been made subjects of special discussion in recent years. For example, there is a chapter on children and money which reminds one of Professor Kirkpatrick's volume on this subject, and which stimulates thought with regard to this important phase of education which is not ordinarily provided for in the school. There are chapters on the cultivation of hobbies, children's parties, keeping of pets, and various forms of punishment that are suitable. Spencer's principles of punishment and justice to children are again discussed, but in a fashion which undoubtedly will leave an impression on the mind of the untechnical reader which Spencer's discussion never has an opportunity to make.

The book is one which can be recommended to parents' associations and mothers' clubs as well as to individual parents who are interested in keeping up with educational movements.

The Argentine Republic has prepared a little volume[1] describing and illustrating the various resources of that country. This volume is prepared in connection with the Panama-Pacific Exposition and can be secured by addressing the Commission of the Argentine Republic at San Francisco.

In short compass this volume gives material which will serve admirably as supplementary reading for a geography class dealing with South America. There are some very good pictures in the book, and the reading-matter is in a style which would be intelligible to children in the grades as well as to adults who may be interested in getting better acquainted with this South American republic.

[1] *The Argentine Republic*, 1915. Pp. 88.

THE COURSE IN COMMUNITY LIFE, HISTORY, AND CIVICS IN THE UNIVERSITY ELEMENTARY SCHOOL, THE UNIVERSITY OF CHICAGO

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In the strict sense of the term we do not teach history below the middle grades. The lower-grade work in community life has in it little of the chronological, or the orderly succession of events. And yet in view of the fact that the emphasis in the upper-grade study of the subject is put upon the changes through which our social institutions of the present have passed as a result of community effort to improve conditions, the studies in community life made in the lower grades serve as a necessary introduction and background to the later studies in history proper. The little children are taught through directed play and construction activities the advantages and the actual necessity of the *co-operation* of the people of a community, whether it be the farmer's family, the Indian tribe, or the small town growing into a city. This is a basic fact. By placing the proper emphasis upon it in the later years the value of studies in history in training for citizenship is increased. The course is a unit, even though there are changes in kind of subject-matter and in method from one stage of child development to another, and though the grading is for the most part not on a chronological basis.

In the kindergarten and first three grades the directed activities, imitative to a great extent, center in turn about the home, the immediate neighborhood, the farm, an Indian tribe, shepherd life, the Vikings, and early Chicago, with community life as the main

theme. Little children are interested chiefly in doing. As in their directed constructive play they engage in activities which in progressive stages of development have influenced society, they are forming a background for the later study of the series of adjustments which constitute the subject-matter of history. To some extent young children can form a conception of the changes that have taken place in the ways of doing things, but the time element is not significant to them.

In the fourth and fifth grades the children study "our ancestors in Europe," with a decreasing amount of class time given to motor activity and with progressively more time given to reading and discussion. The romantic elements of this period of history make an effective appeal to children of this age. The story interest is still strong. There is a growing appreciation of the evolution of ways and means. In the first of these two years the pupils study ways of living in Greece and in Rome and some of the events in the history of these peoples; in the second they study in an increasingly logical fashion some of the forces at work in mediaeval Europe, and especially in England, which are of special significance to Americans of today.

In the last two grades, the sixth and the seventh, American history forms the subject-matter, with more stress placed on the industrial and social changes than on the governmental and political evolution. This course is not based directly upon a textbook, although the text serves to give balance and perspective. There is a great deal of silent reading in the study periods at school and some at home. Expression through motor activity is less interesting at this stage. There is a growing interest in cause and effect. The chronological in history becomes more significant. A beginning of the scientific study of history can be made here through the checking up of the data upon which conclusions may be based and the examination of the validity of the conclusions themselves.

At no stage is a study of facts made merely for their own sake. History information, like all other information, serves chiefly to supplement and round out direct experience. The recitation is to a large extent a discussion based on the history facts learned in the

reading with a view to forming judgments or to making the picture of conditions more vivid.

Civics as a study of the activities of the community—local, city, state, and nation—is a part of the courses in geography, English (current events), natural science (community hygiene), home economics (foods and markets), arithmetic, household arts (textiles), art, and printing, as well as history. Civics as an analysis of the machinery of government belongs to a later stage in the pupil's intellectual development.

At the end of the statement for each grade is shown the time given to the subject. This, in most cases, does not include time given to activities which are to some extent related to the study of history, such as oral and written composition, reading, drawing, and, in the lower grades, construction.

The time given to the course in Community Life, History, and Civics in the University Elementary School in the last four grades totals 350 hours, while the average for fifty representative[1] schools for the same period is 346 hours. In the first four grades of this school, on the other hand, 300 hours is the total time given to the subject, while the average time for the same period in those of the fifty schools in which history is taught in these grades is 150 hours. In this computation our fourth-grade time is included in both groups because our course above the kindergarten is one of seven years instead of eight.

KINDERGARTEN

Little children tend to reproduce in their imitative and constructive play some of the aspects of home and community life with which they are familiar. In organizing the work of the kindergarten, therefore, this interest is made use of as a means of extending and interpreting the children's knowledge and experience with reference to some of the significant phases of their social environment. The seasons of the year and the festival days are factors in determining the particular phases of home and community life to be emphasized.

[1] "Time Distribution by Subjects and Grades in Representative Cities," Henry W. Holmes, in the *Fourteenth Yearbook of the National Society for the Study of Education*, 1915.

Since the young child's mode of learning is so largely of the motor type, this work often takes the form of objective play projects. These are sometimes individual and sometimes group projects. They furnish concrete organizing centers of interest and activity extending over several days or weeks.

Aims.—The aim in selecting particular phases of the children's home and neighborhood life as a background for their play activities and constructive work is to awaken an intelligent interest in some of the important factors of their social environment and to organize and enrich their everyday experiences.

Outline of subject-matter.—

OCTOBER AND NOVEMBER

The food supply in the home in its relation to the school garden, the grocery store, and the farm.

1. The fall garden produce to be found in the school garden. Relation of the harvest to the spring planting.
2. The grocery store which supplies the home.
3. The farm as it is related to the food supply.
4. Thanksgiving as the culmination of the harvest season.

DECEMBER

The preparation for Christmas and its celebration in the home and in the kindergarten.

JANUARY, FEBRUARY, AND MARCH

The home itself and its use by the family.

The kitchen and dining-room in relation to the serving of food. The living-room and bedroom and their use by the family.

APRIL, MAY, AND JUNE

The family in its relation to the community.

1. The different kinds of homes, houses, and apartments.
2. Houses and apartments on the streets—conveniences on the street:
   - Sidewalks
   - Street lights
   - Mail boxes
3. Public buildings of use to the community:
   - Churches
   - Schools
4. Needs of the community supplied by the stores and shops.

5. Ways of getting about in the community:
   Street cars
   Trains
   Automobiles
6. The service of parks and playgrounds to the community.

Subject-matter and methods of procedure.—

The work of the fall season is based upon activities and occupations (domestic and industrial) that are necessary in supplying the family with food. Many of these are familiar to the children, and they learn of others through excursions, actual processes carried on in the kindergarten, and pictures. They naturally indulge in housekeeping plays and in buying and selling plays. The objects needed in carrying on these plays furnish good problems for building and other construction work. A means of organization is through objective projects, resulting in tangible, relatively permanent play centers. These are the house itself with its kitchen as the central feature, the grocery store, and the garden or farm.

When the children first come to school, they find, among other attractive things, such toys as dolls, some doll furniture, kitchen utensils, and dishes. They play with these freely, as they do also with blocks, sand, and clay. The teacher may easily lead this play in the direction of cooking and serving plays. There soon begins to take form in one corner of the room, therefore, a miniature kitchen or dining-room. The teacher then produces a screen house with a door and windows, which serves to inclose this little room, which may now stay in place as long as it is wanted.

This playhouse now becomes the center of great interest and activity. Clay utensils and dishes are made, a cupboard to hold them is built of blocks, paper is cut for the shelves, paper doilies are cut and fringed, napkins are folded, and a meal is planned. A trip to the grocery is necessary to buy a cereal, which is then cooked and served by the children. This trip to the store suggests the building of a grocery store in the classroom. This now becomes the second problem or project. It calls for much planning and experimenting, and results very naturally in group work, since the final product is a structure made of blocks and boards which is

large enough for three or four children to play in at the same time. Another excursion is needed to get suggestions as to how to make shelves, the counter, and show windows, and to learn what a grocery store really carries for sale. Numerous lesser problems present themselves for the children's solving: vegetables and fruits of clay must be shaped and colored accurately enough to be readily recognized, and baskets made to hold them; paper bags must be contrived; pictures must be made to show what canned goods are in stock; pocketbooks and money for the buyers must be provided and delivery wagons constructed. These are not made from patterns or models, but are worked out by the children and the results tested by actual use in playing in the grocery store. The teacher aims so to direct the handwork that the children will grow steadily in their power to solve simple problems and handle material skilfully.

The third project, the farm or garden, is subordinate to the other two, partly because it is less familiar, partly because it is taken up again in the first grade. The oldest children sometimes make a miniature farm in the sand table, showing the grain fields, vegetable garden, orchard, and the main buildings and animal inclosures and shelters.

These so-called play centers serve to hold the interest and attention over from day to day and from week to week. They supply the condition and motive for much of the handwork and dramatic play. They stimulate the children to bring things from home that help to complete the particular equipment. They create a need for excursions to a number of interesting places, with the result that the children's observation is directed in most natural fashion to the important things.

The children get a fund of definite information through these excursions and the questions which are asked and answered in connection with them. These, with related subjects, supply excellent material for oral expression, oral composition, and dramatization, as well as expression through illustrative drawing. The children gain desirable social habits through the co-operative activity necessary to the accomplishing of their common purpose.

The fall work culminates with the preparation for, and celebration of, Thanksgiving. The social side of the holiday is emphasized

by inviting the parents to the kindergarten for a simple party, in preparation for which the children make some suitable room decoration and a box or basket to hold nuts or popcorn.

The month of December is given up to the preparation for Christmas and its celebration in the home and the community. The grocery store is converted into a toy store, which is now stocked with numerous toys made by the children. The old rhyme, "The Night before Christmas," is used as a means of recalling the joys of last year and anticipating those near at hand. A fireplace made of large floor blocks with paper stockings hung from the mantel supplies the necessary setting for the dramatization of this rhyme. The making of this fireplace furnishes another problem which the children attack and work out with great interest and concentration.

The Christmas tree is planned for, bought, and decorated by the children. These delightful experiences help to create the mood that finds satisfactory outlet in the planning and the making of gifts for the parents. Two simple gifts are made by each child, such as a clay paper weight or candlestick, a calendar or blotter, or a needle-book or stampbook. The three weeks of work finds fitting climax in the day when the parents come to share in the Christmas celebration.

During January, February, and March the theme around which the activities center is the home itself and its use by the family. Again the screen house serves to inclose a space which is furnished with forms built of the floor blocks. As the children play with their dolls in the little house, they discern the need of further furnishings and equipment, which they procced to supply, using clay, paper, and textile materials. Some of the older children construct miniature individual rooms, using boxes for the floor and walls and paper for decorating and furnishing these rooms. Other children make little sets of toy furniture of pieces of wood cut to the proper size. These parts the children must pick out, nail together, and stain. Bed covers and other accessories are made by the children to complete the set. In connection with this work a rug is designed and woven of jute, the children stringing their own strawboard looms for the purpose.

During April, May, and June the theme about which the activities center is the home in its relation to the community. Different kinds of homes as represented by houses and apartments are built. Miniature streets are laid out on the floor, using blocks and other material to represent sidewalks, street lights, and mail boxes. A street of stores is added, the particular store being designated by the goods displayed in the windows. These various displays are represented by free cutting.

A miniature community is constructed of paper, including houses, apartments, a church, school, stores, street cars, and automobiles. This furnishes problems in proportion, spacing, and arrangement, besides those involved in the actual construction.

All through the year the children are given opportunity to initiate many of their own problems and ample time to solve them independently.

Attainments.—(1) A more intelligent understanding and appreciation of the meaning of the important aspects of the social environment; (2) increased ability to maintain interest in play projects which require some time for completion; (3) increased ability to use plastic materials to express ideas and interests.

Time.—The time given to handwork and other activities related to the subject of home and community averages about forty-five minutes a day.

Textbooks.—No books are used.

FIRST GRADE

The major subjects of the work in Community Life and History in this grade are for the first semester the farm as the source of food supply, and for the second, Indian life, with the purpose of contrasting our own complicated means of providing food, shelter, and clothing with the more simple mode of living of the Indian.

Aim.—The aim is to give background to the very simple grade activities of preparing food, weaving, sewing, and gardening. The child's effort to do in a small way what the people about him are doing brings about some degree of appreciation of the labor and efforts of others and some understanding of the products which are the result of work.

Subject-matter and method.—In the fall the farm as the source of food supply is the main topic. The majority of the children have just returned from the country, and their enthusiasm makes them desire to tell about their summer experiences. Different ones tell what they have seen which makes the farm different from the city. They tell who lives on the farm, what the farmer's work is, what he needs for his work, what the different products are used for, what the farmer's wife does, what his children do, what they themselves did, and what they found the most fun.

The experiences with the hay are usually the most vivid, the raking into piles, sliding down the "hay hills," riding on the hay wagon, playing in the hayloft. These, together with other farm occurrences which the children have seen during the summer, such as cutting wheat, gathering fruit, and feeding animals, are dramatized or represented through drawing, paper-cutting, or modeling. The following poems relating to farm life are read to the children and a few of them, chosen by the children, are memorized:

From Stevenson's *A Child's Garden of Verses:*
- The Friendly Cow
- Farewell to the Farm
- The Hayloft

From Whittier's *Child Life:*
- The Cow Boy's Song
- Old Dobbin
- Farm Yard Song
- The Clucking Hen
- The Motherless Turkeys

From the *Rosy Ring:*
- A Year's Windfalls
- Milking Time

The conversations, drawing, modeling, construction, and dramatization related to this topic cover a number of periods. As the children give their observations and experiences, the teacher writes them on the board, and later has them printed in large type on charts for reading-lessons. The following are a few of these lessons:

I

We see a barnyard on the farm.
We see fields on the farm.
We see orchards on the farm.
We see woods on the farm.
We see a brook on the farm.
We see a garden on the farm.

II

The farmer lives on the farm.
The farmer's wife lives on the farm.
The farmer's children live on the farm.
The farmer's animals live on the farm.

III

The farmer cuts hay.
The farmer plants corn.
The farmer plants oats.
The farmer plants wheat.
The farmer plants a garden.

IV

The farmer's children gather eggs.
The farmer's children gather fruit.
The farmer's children play in the hay.
The farmer's children ride horseback.
The farmer's children run over the fields.

As a further means of organizing these experiences, a miniature farm is set up on the sand table. The various buildings are constructed from cardboard, fields of grain are sown, fences and trees made, toy animals provided, and the pictures made as complete as possible. The sand table is a source of much imaginative play, and the children's initiative is encouraged in planning and in acting out their various farm experiences with the material available. Here they have an opportunity to retell the stories of farm life which have been told them and to invent new ones.

Each child also plans and makes a Farm Book. The following materials are used: (*a*) pictures which the children collect from the various magazines and farm journals; (*b*) illustrations which they have made; (*c*) paper-cuttings; (*d*) explanatory sentences

which they add whenever necessary. All this material is arranged by the children with the help of the teacher. The Farm Book is thus a constant help in organizing and using their knowledge of the subject.

The farm as the source of food supply becomes very familiar. To make this phase of it more vivid, a grocery store is visited and farm produce is noted, thus making the connecting link between farm and home. The transporting of food from farm to home is discussed, and a little play is arranged to illustrate it.

Finally, as a wholly social activity, the preparation of some of the simple farm products for the table is begun. One typical product such as wheat or corn is followed from the preparation of the ground to one of its final uses in the making of muffins or corn bread. Another group of children is invited to dine on corn bread spread with butter of the children's own making.

Following is a typical oral composition in which the children gave the recipe for butter-making. This was later used for a reading-lesson.

We put a half-cup of cream in a bottle.
We shook the bottle about ten minutes.
We said this rhyme:

Come, butter, come.
Come, butter, come.
Johnnie's at the garden gate
Waiting for his butter cake.
Come, butter, come.
Come, butter, come.

When the butter came, we washed it.
We put in a half-teaspoonful of salt.
We made it into a pat.
We invited some other children in.
We ate our butter on crackers.

Other simple activities of this nature are the husking and popping of corn, the toasting of bread, and the baking of apples.

This work culminates in the idea of the harvest and our day set apart as a day of Thanksgiving for this bounty.

The sand-table farm is changed from a summer farm to a fall farm. The corn is stacked in the fields, and apples of clay, painted

red, are put in piles in the orchard. Clay pumpkins are made. The green trees are replaced by twigs representing the bare trees. A miniature Thanksgiving table is set and provided with every available farm product which is suitable for this season, and which can be represented by the children through paper-cutting, modeling, or construction.

In December the preparation for Christmas abruptly interrupts this general plan. The Christmas stories given in the literature list are told. The children build a big toyshop with blocks and furnish it with toys, which are to be sent to others as Christmas gifts.

In January the study of Indian life is begun. A contrast is made between the simplicity of primitive life and our more complicated manner of living. At the same time our variety and richness of supply and the comparative ease of acquiring it are not lost sight of.

This Indian work makes strong dramatic appeal to the children; it is simple enough to be comprehended by them, and it supplies stories of real literary value and opportunities for variety of expression. The neighboring Field Museum offers rich and accurate illustrative material and with the libraries a wealth of opportunity for the teacher's preparation.

The life of the Ojibway Indians is studied as typical. The basis for the study of Indian life is found in Jenks's *The Childhood of Ji-Shib, the Ojibwa*. This story, in which the life of an Indian child is portrayed, gives most of the phases of Indian life desirable for presentation to children. With this story as a basis the teacher is able to present the subject in a concrete way, contributing details wherever needed and rearranging parts to suit her needs. On the sand table or in the individual sand pans the children reproduce parts of the story of Ji-Shib and work out new adventures suggested by it. They make an Indian Book in which are kept their drawings and paper-cuttings.

In addition to its being a much-treasured record, this serves as a means of organizing the work and giving motive to the reproduction of parts of the story. They carry out some of the activities of Indian life, such as the threshing and grinding of grain and the

parching of corn. They dramatize many of the Indian activities: hunting, fishing, moving, feasting, dancing. They play many of the Indian games.

Each child makes an Indian suit for himself, cut kimono style, fringed on all the edges, and decorated with Indian designs. He weaves a rug of simple pattern, models some of the cooking utensils, and makes a bow and arrows of sticks and strong cord and a canoe of cardboard. A wigwam designed and decorated by the pupils is set out of doors to become the center of the play periods. The subject suggests to the teacher a wealth of material suitable for this sort of expression.

The following outline indicates the order in which the topics are taken up:

1. Setting: This region as the former home of the Indians
2. Ji-Shib: His birth and babyhood, his parents, naming the baby, the totem, his cradle
3. Ji-Shib's home:
   a) Location of the Indian village
   b) The building of the wigwam
4. Food:
   a) Things used by the Indians as food, as roots, berries, grain, flesh of animals
   b) How procured
   c) How prepared, and by whom
5. Making weapons and utensils:
   a) Weapons used in hunting
      (Materials used, and where obtained. A simple comparative study of stones, as flint, quartz, sandstone, and granite, is made in this connection to find the most suitable material for weapons. Reasons for selecting quartz and flint for this purpose.)
   b) Utensils made
6. Ji-Shib's boyhood:
   a) Games and amusements
   b) Tasks
7. Ji-Shib's hunting:
   a) Killing the first game
   b) The "Boy's Hunting Feast"
8. Moving time:
   a) Why necessary for Indians to move often
   b) Description of Indians on the trail
9. Ji-Shib's youth:
   a) His fasting
   b) His subsequent work as a hunter

The first year closes by rounding out the idea of the garden, planting the seeds saved in the fall and others selected after much discussion and planning. And although the time for this falls in the natural-science periods, the idea completes the cycle of the harvest which initiated the history work of the year. The farm experiences of the autumn are recalled and a second visit is made to the farm, if possible, to see the spring activities there.

The following references are given as suggestive for teachers' reading:

REFERENCES FOR THE STUDY OF THE INDIAN

1. Wigwam:
   M. G. Humphrey, *The Boy's Catlin*, pp. 32–33.
   F. Starr, *American Indians*, pp. 11, 12, 14.
2. Transportation:
   M. G. Humphrey, *The Boy's Catlin*, pp. 33–35.
   Jenks, *The Childhood of Ji-Shib*, pp. 19–22, 28–32.
3. Campfires:
   F. Starr, *American Indians*, pp. 53–59.
   Herbertson, *Man and His Work*, pp. 77–78.
   Mason, *Origin of Inventions*, pp. 85–100.
4. Cooking:
   M. G. Humphrey, *The Boy's Catlin*, p. 39.
   Herbertson, *Man and His Work*, p. 78.
5. Hunting and Fishing:
   Starr, *American Indians*, pp. 46–53.
   Jenks, *The Childhood of Ji-Shib*, pp. 52–57, 59–61, 79–85.
6. Food:
   Jenks, *The Childhood of Ji-Shib*, pp. 67–69.
   Mason, *Woman's Share in Primitive Culture*, pp. 14–40.
7. Weaving and Pottery:
   Woman's Share in Primitive Culture, pp. 41–69, 91–113.
   Origin of Inventions, pp. 152–82.
8. Canoes:
   Jenks, *The Childhood of Ji-Shib*, p. 62.
9. Flint:
   Mason, *Origin of Inventions*, pp. 124–39.
10. Dress:
    Starr, *American Indians*, pp. 14–21.
11. War:
    Jenks, *The Childhood of Ji-Shib*, pp. 70–77.
    Starr, *American Indians*, pp. 39–40.
12. Pictures:
    Starr, *American Indians*, pp. 65–73.

Standards of attainment.—At the end of the first year the children have gained some idea of: (1) the succession of seasons; (2) the farm activities in their relation to food supply; (3) the value of transportation; (4) the dignity of labor; (5) the occupations of the people of their own community.

Time.—The time schedule provides three half-hours a week for this subject, although additional time is given to related reading, drawing, natural science, and construction.

SECOND GRADE

FIRST SEMESTER

The industrial activities of the second grade group themselves about the construction and furnishing of a wooden playhouse during the first semester and work in textiles during the second semester. The course in Community Life, History, and Civics serves to give background and meaning to these activities.

Subject-matter and method.—The making of a playhouse is presented to the children as a plan to be worked out, and with this in view other types of shelter are considered. During the previous year the children have played at Indian life and enjoyed the making of wigwams. These experiences are recalled and other kinds of Indian homes are suggested. Primitive tree- and cave-dwellings, brush huts, stone cairns, Eskimo igloos, Japanese houses, and log huts are typical forms of shelter discussed. On the sand table the children make some of these dwellings with appropriate settings. The geography of the region in so far as it influences types of structure is pictured, and in this way typical physiographic areas are worked out, as, for instance, the wooded hills of temperate zones for the tree- and cave-dwellers and the arctic regions for the Eskimo.

From these primitive forms of shelter the children's attention is called to modern structures. Here, often for the first time, children's eyes are opened to the architectural details about them. Windows begin to vary from the stereotyped rectangle of a child's first drawings; doors, roofs, and chimneys gain an interest entirely new. The materials used in modern buildings are noted, and through pictures, stereoscopes, models, and reading something

of their sources and production is worked out. The children use the Meccano set to make in the sand pan a quarry with derricks. Toy trains and tracks are brought from home to heighten the realism.

In all this plans for the playhouse are becoming better defined and the ideas of its form, its material, its arrangement gradually develop. When the shape and proportions are determined, wood cut to shape is supplied, and each child builds his own playhouse. These are painted; windows of transparent celluloid are fitted into frames measured and made by the pupils from construction paper; and window boxes, awnings, porches, and lattice for the entrance ways are made as individual problems from materials of the children's own choosing. The making of furniture creates problems in number construction. The rugs and hangings alone are lacking, and this becomes the textile problem which begins the work of the second semester.

SECOND SEMESTER

Textiles.—The children decide on the size of their rug, and the class attempts the problem, beginning with the first steps in cloth-making. They are given a fleece which we secure cleaned; this is divided among them. They shear it and card it and attempt to spin. They try twirling the wool in their fingers, then they try twirling with a weight to keep the thread straight. They experiment with an Egyptian spindle. Although failure to obtain usable thread is inevitable, yet the earnest efforts, the inventions to make the thread less knotty, the repeated attempts to splice it neatly and firmly, are certainly of value. It puts the children into an attitude of appreciation that is wholesome, and when some spinner who learned the art in the Old World is engaged to come to spin for them, they are enthusiastic. We use this wool which is spun for us as far as it goes and buy the rest. The next problem is to dye it for use. The making of the required rugs and hangings for the playhouse is divided among the children. Each constructs a loom of cardboard or wood of the proper size for his piece of work; accurate designs in color are made to fit, and then sufficient wool of the desired color is prepared.

The dyeing is a source of pleasure and wonder. Each year the children suggest new materials to try as dyes, and no small part of the pleasure lies in the hopes that surround these experiments. After several years' trial the following have proved the most satisfactory, being permanent without a mordant:

Walnuts, Butternuts, Coffee, Tea, Cocoa, Onion leaves — brown	Spinach—green
	Cranberry—pink
	Bluing—blue (indigo being too tedious to prepare)
	Oak bark—nearly black
	Pokeberries—nearly black
Mustard, Peach leaves — yellow	Cochineal—red (no vegetable has given us bright red)
Grape juice—purple	

Stories of shepherd life and of great weavers form the background of this textile work. The life of the shepherd peoples is an ideal subject for little children, offering poetry, beauty of imagery, and a life of simple ideals.

The work is introduced by showing the children bits of weaving from the looms of those peoples that stand out prominently as weavers: the Navajo Indians, the Persians, the East Indians, and the Arabs. The point is made that all great weavers have been shepherd people, and then stories are told of the goatherds of Switzerland and of the shepherds of Scotland and Greece, until this shepherd life becomes full of meaning. The children are told Bible stories of Abraham, Joseph, and David. The Twenty-third Psalm is read and re-read.

The work is sometimes based on the life of various shepherd peoples and sometimes confined to one people, when it is more completely worked out. The basis of choice is the maturity of the children and the kinds of stories they have heard read at home. In either case an effort is made to give the children such richness of illustrative material and such opportunity for expression as will secure vivid imagery. For instance, if the shepherd life of the Bedouins is to be studied, stories of Arabia are told, such as some of the Arabian legends, the story of *The Lance of Kanana* by Abd el Ardavan, Browning's *Muléykah* and parts of Jane Andrews' *Seven*

Little Sisters. The children enjoy making a toy stage on which to give a puppet play of Arabian life.

In preparing for the play, dressing the puppets, and making the scenes and the setting the children are faced by their lack of information, and questions and efforts follow to find out what they need to know. Bit by bit these details of the subject are worked out through reading-lessons, pictures, stereopticon views, and trips to the Washington Park Conservatory to see the vegetation and to the Field Museum to see costumes and implements.

The work is carried out from the standpoint of information according to the general outline which follows.

SHEPHERD LIFE

1. Work of a shepherd:
   - A. Mode of life
     - *a*) Pleasures
     - *b*) Hardships
2. Animals that are domesticated:
   - A. Herds of reindeer in Lapland
   - B. Herds of goats in Switzerland
   - C. Herds of sheep in Greece
   - D. Cattle ranches of the West
   - E. Herds of camels in Arabia
3. Steps in civilization from the hunter stage to that in which animals are protected and domesticated.
4. The Arab of the desert as a type of shepherd:
   - A. Study of the desert
     - *a*) Arid waters
     - *b*) Oases as centers of trade
   - B. Life of the people
     - *a*) Occupations
     - *b*) Habitations
     - *c*) Dress
     - *d*) Food
     - *e*) Travel
5. Shepherds of Palestine:
   - A. Study of a typical region
     - *a*) Grassy hillsides
     - *b*) Brook basins

B. Life of the people
   a) Occupations
   b) Dress
   c) Habitation
   d) Food

6. Rug-makers of Persia:
   A. Study of a typical region
   B. Life of the people
      a) Dress
      b) Habitations
      c) Occupations
         1) Work of dyers; material for dyers
         2) Work of weavers; form of loom
         3) Dignity and meaning of the work, prayer rugs, ceremonial rugs, saddle rugs
         4) Rugs, fairs, trade

Bibliography on Shepherd Life

REFERENCES FOR CHILDREN

Readers:

Little Folks of Many Lands (L. M. Chouse), pp. 67–81.
Seven Little Sisters (Andrews), pp. 50–52, 53–65.

Reading-slips have been prepared as follows:

Jennie Hall, *Bedouins.*
———, *A Persian Dyer.*
———, *A Persian Weaver.*
———, *The Rug Fair.*
———, *A Lost Sheep.*
———, *A Shepherd Village.*
———, *Story of Giotto.*
———, *Navajo Shepherds.*
———, *Navajo Weavers.*
———, *The Old Weavers.*
Ann Taylor, *The Sheep.*
Coleridge, *Hunting Songs.*
Dempster Sherman, *The Clouds.*
Second Grade, F. W. Parker School, *Shepherds.*
William Blake, *Little Lamb.*

REFERENCES FOR TEACHERS

Herbertson, *Man and His Work.*
Mason, *Origin of Invention*, chap. ix, "Animals"; chap. vii, "Weaving."
Starr, *Some First Steps in Human Progress.*

Joly, *Man before Metals.*
Dougherty, *Arabia Deserts,* Vol. I.
Palgrave, article on "Arabia" in *Encyclopaedia Britannica.*
Philips, *The Desert.*
Reclus, *Earth and Its Inhabitants,* Vol. I, *Asia;* Vol. IV, *Kirghis.*
Stanford, *Compendium of Asia.*
Mumford, *Oriental Rugs.*
Holt, *Journey through High Asia.*
Bell, *Among Women of the Sahara.*
White, *From Sphynx to Oracle.*

Standards of attainment.—By the end of the second year the children have ability to form a somewhat complete idea of the simpler related activities of a people living under primitive conditions. They have grown in power of oral, written, pictorial, and constructive expression. They have grown in independence in thinking and working. They have progressed far in ability to gain information by reading. An intelligent interest and a new appreciation of the world's work are dawning.

Time.—On the time schedule this subject is given a half-hour period daily, but the related subjects, such as art, literature, reading, composition, and constructive work which develop this subject, greatly increase this allotted time.

THIRD GRADE

FIRST SEMESTER

The principal topics for the first half-year are trade and exploration. These are followed in the second half-year by the study of pioneer life, especially that relating to early Chicago, contrasted with such present-day conditions as are within the child's experience. The child of this grade is emerging from the fairy-story age, and the wonder inspired by the myths and fairy stories is succeeded by the love of adventure and exploration and by admiration for the heroic qualities of the explorer and the pioneer. He demands more of reality in stories. He is interested in the actual conditions met by early settlers in his own community, in the way they met those conditions, in the changes that have come about, and in the present-day problems of the community.

Aims.—(1) To lead the child to some understanding of a type of society where man no longer is immediately and directly dependent upon nature, as in the case of the hunter and shepherd, but where he obtains most of the necessities of life through his own efforts in planning and in laboring in accordance with natural laws; (2) to help the child to see that successful community life depends upon the interest and responsibility of individuals toward the general welfare.

The subject-matter is treated as interesting material by the use of which certain habits and types of skill may be acquired, such as skill in oral and written expression and in pictorial representation, ability to acquire information by reading, power of concentration of thought and effort, and a responsible attitude toward the lesson content.

Subject-matter and method.—As a brief introduction to the study of the vikings the children take an imaginary journey to Norway, getting through pictures an idea of the ruggedness of the country with its mountains and waterfalls and its rocky coast and the many fiords. They represent the coast in the large sand pan, with boats threading their way past the islands up the long, narrow inlets.

The vikings are studied as a type of seafaring people, and so the children are early asked the questions: How, probably, did the inhabitants of old Norway get from one part of their country to another? What kind of boats do you think the people made at first?

Because of the fact that children have a very real interest in boats, and because the boat was the principal means of transportation among the Norse, attention is concentrated for a time on a study of primitive boats and how they evolved. The children are led to imagine themselves in an age when boats did not exist, but where travel by water was desirable. They construct in imagination some of the early boats, then suggest inventions that would improve them, and illustrate their ideas upon the blackboard. The teacher shows pictures of primitive boats and tells stories of people now using them. The children go to the Field Museum to see primitive boats. A record of this trip is written, each child

describing some particular boat. Pictures of the boats are drawn on the blackboard and on paper.

Information concerning the kinds of boats they have seen is then gained from reading-lessons on dugouts, bark canoes, rafts, and boats with outriggers.

A study of the vikings as a seafaring people follows. Three-fourths of the semester is spent upon this study. Considerable attention is given to their mode of life, as influenced by physiographic and climatic conditions. This includes a study of their ships, weapons, homes, occupations, and, incidentally, their education, dress, and pastimes. All this is brought out in the discussion of the stories that are told and read. As the Norsemen's ideals were largely embodied in their interpretation of nature, some of the Norse myths are read or told. The children often refer to the attitude which these people had toward certain phenomena of nature; e.g., in a thunderstorm the children are likely to say, "Thor is using his hammer."

The children readily see that through constant life on the sea, both in getting food and in other adventure, the Norse gained a love of the sea—its bigness, beauty, and force; that they became brave, hardy, and strong; that their natural fearlessness led them beyond their own waters.

A definite study is made of trade and adventure, special emphasis being laid upon the kinds of ships and weapons used and ceremonies attendant upon their use. Trading vessels are compared with war vessels. Descriptions are given by the teacher and pictures are shown. The children suggest for the boats names that are in keeping with the spirit of the times. They draw boats on paper and on the blackboard. Boats are cut out freehand and mounted. A boat is constructed of cardboard after the children have made a trip to the Field Museum to see the viking boat there. Considerable freedom is given in this constructive work, such as letting the children invent their own way of holding the sails.

Certain topics, such as sails or shields, are used for written exercises. Because of their definiteness such topics give opportunity for practice in correctness in form. Alternating with the construction work, or running parallel with it during the literature

period, the first four stories from the *Viking Tales*, by Jennie Hall, are read aloud. These stories are useful because they embody many important facts and illustrate the spirit of the vikings. Descriptions of the dragon ship are printed in the form of a reading-lesson. The result of this work is sometimes embodied at the end of the term in an original story of adventure composed by the children and similar in nature to the stories studied. For example, the children imagine themselves vikings and take names. The first story contains a description of the boats and weapons. Then, as the work grows, other stories, based on the adventures of a trader or warrior, follow. When they are finished, the stories are put together in a unified composition.

The next stories read from *Viking Tales* are "Foes Fear," "Harold Is King," "King Harold's Battles," and "Harold Goes West over the Seas." These stories furnish a basis for a study of one of the arts of the people, the making of weapons and armor. Descriptions are given and pictures are shown. Swords, spears, and shields are cut out of cardboard freehand, then decorated and printed with runes. They may even be of sufficient size and heavy enough not to require mounting. In the regular art periods figures in repose and in action, with weapons, are studied.

Especially in the stories of the Norsemen as lovers of adventure are their characteristics of strength, fearlessness, vigor, and heroism made plain. Some of the sagas are read.

This leads to a study of the vikings' home and the feast hall, which was the center of their social life and the place for the recital of adventures in song and story. A reading-lesson, prepared by the teacher and printed, gives the necessary information about this feast hall. For illustrative construction the pupils design and make a feast hall and its furnishings of cardboard. They work in groups upon certain features of the hall, and the best product of the group is used for the final production. The feast hall may be set up in the sand pan, together with other buildings comprising the home. The children are allowed considerable freedom in making these buildings, adapting the material that they have to use and being held only to the essential ideas of decoration and arrangement.

The children dress dolls at home, following the illustrations given in *Viking Tales*, naming them and placing them in the homes in the sand pan, where are also small viking ships. When the construction is completed, the children arrange in the sand pan some scene selected from the various stories they have heard or read, such as a home-coming or a feast. This makes a fitting conclusion to the history of the vikings.

OUTLINE

The Vikings:

A. Settlement of country
   1. Along seacoast because of
      a) Dense forests
      b) Unpromising interior
      c) Mountains running close to shore
      d) Sterile soil

B. Occupations
   1. Fishing
      a) How done
      b) When done
      c) How fish was preserved
      d) Vessels used
   2. Trading
      a) Countries visited
      b) Articles of trade
      c) Means of exchange
      d) Vessels used
   3. Adventure
      a) Kinds
         1) War
         2) Exploration
      b) Vessels used
         1) Size and shape
         2) Material
         3) Benches and desks
         4) Decorations
         5) Sails
         6) Equipment
         7) Naming of vessels
         8) Ceremonies attending journeys

c) Weapons used
1) Kinds
2) Of what made
3) Decorations

C. People
1. Appearance and characteristics
a) Strong
b) Fearless
c) Truthful
d) Vigorous
e) Heroic
f) Love the sea, mountains, forests

D. Homes
1. Number of buildings comprising homes
2. Size, general shape, and arrangement
3. The feast hall
a) Size
b) Shape, material, furnishing, decorations, use

Time.—Three half-hours a week are given to this subject in the first half of the third grade.

REFERENCE BOOKS

For the teacher:

Du Chaillu, *Viking Age.*
Percy, *Northern Antiquities.*
Keyser, *Private Life of the Old Northmen.*
Dasant, *Vikings of the Baltic.*
Du Chaillu, *Ivar the Viking.*
Morris, *Three Northern Love Tales.*
Wilmot Buxton, *Stories of Norse Heroes.*
The Noreona Library, *Story of Harold Hairfair.*
David Mutt, "Sagas and Songs of the Norsemen," *The Strand,* London.
Keary, *Heroes of Asgard.*
Taprell Darling, *All About Ships.*
Harper's Boating Book for Boys.
E. Keble Chatterton, *The Romance of the Ship.*
Du Chaillu, *The Land of the Midnight Sun.*

For the children:

J. T. Chamberlain, *How We Travel.*
Jennie Hall, *Viking Tales.*

Reading-slips:

A Trip to Norway
The Islands of Norway
Fiords
Lighthouses
Pilots
Dugouts
Birchbark Canoes
Rafts
Boats with Outriggers

SECOND SEMESTER

The course in the second half of the third grade consists of a study of Chicago in pioneer times followed by a study of some of the present-day local-community problems.

Subject-matter and method.—As an introduction to the study of old Chicago, the fur-trading post, the story of the discovery and exploration of the St. Lawrence River is very briefly told. The St. Lawrence River and the Great Lakes are traced on the sand table and the children imagine that they are French explorers and make the journey to Chicago in toy ships.

An idea of the appearance of the country is gained through a study of pictures of prairie and swamp, through stories of the life and activities of the Indians and French, and through personal experiences of children who have seen similar stretches of country. Pictures and mounted specimens of the otter, mink, beaver, duck, partridge, and such other birds and animals as are typical of this region, are studied. A trip is made to the Field Museum to study exhibits of Indians and of animals not found in the school museum.

The children read the story of "The Guardian Angel Mission" (Hall, *The Story of Chicago*) and select parts for dramatization. For the time being they are Indian braves shaping arrow heads, feathering arrows, making snowshoes, digging flint, and trapping the beaver. They impersonate squaws cooking, weaving baskets and rush mats, stretching skins to dry, gathering wild rice, and hoeing corn. The braves hold councils with the French and discuss troubles with neighboring tribes. One child becomes a Jesuit pleading with the Indians not to make war on other tribes. Another child becomes chief of the Miamis, and, with a few of his braves, loads his canoe with furs and supplies of corn and pemmican, and makes a trip to Montreal where he and his braves and representa-

tives of several other tribes meet the "White Father" in council. Still other children impersonate the French and barter with the Indians for furs.

Several types of concrete work, such as the writing of original stories, sketching, and sand-table work, accompany this topic as a means of further expression and as a summary.

In the composition period each child writes an original story in which he imagines that he is a brave, a squaw, or a fur trader. In the art period sketches are made of men "making a portage."

Chicago as a trading-post is represented on the sand table. The plans for wigwams, trader's cabin, and the mission house are worked out in class, but most of the construction work is done voluntarily out of class time. The Chicago River and Lake Michigan are located on the sand table, and the wigwams and other buildings are added as they are completed. While doing this work the class is led to discover reasons for locating a trading-post here. The trapper's story of his journey far to the west, and of seeing the Mississippi River, is read by the class (Hall, *A Story of Chicago*). The teacher tells of the travels of Joliet and Father Marquette and helps the children to trace on the sand table their voyage up the Fox River and down the Wisconsin to the Mississippi, also the return trip up the Illinois and Des Plaines rivers, across the portage and down the Chicago River to Lake Michigan. The pupils already know of the water route to Montreal. Thus they are led to see that Chicago is a meeting of many water paths and that the furs could easily be gathered there and shipped to markets on the St. Lawrence River.

In the study of the present-day Chicago there is opportunity to summarize much of what has been previously studied regarding early Chicago and to bring out sharply the contrasts between present-day conditions and those of pioneer times. The approach is from the present to the past because the child's own experiences help him to see the problems which have been solved for him in his everyday living. He contrasts the streets over which he travels and the present facilities for transportation with the roads and transportation of early times. Discussions of such topics as the means of illumination, the water supply, protection against fire,

and other services rendered by the city to its citizens bring out the thought of how, as the city grows, it attempts to meet the needs of its people. As many topics are worked out as time allows. The development of the following topic shows the general method.

The Water Supply

Attention is called to the ease with which water can now be obtained in the city for any purpose. The present system with its drinking fountains, convenient faucets in kitchen, lavatory, laundry, and pipes for lawn and garden is briefly discussed, and the children see that their knowledge of how it is supplied is very superficial. They do know, however, the ways in which water was obtained by the early settlers, and that knowledge forms the basis for the development of the topic.

Pictures of early Chicago and of other settlements in which rivers and wells are prominent are collected. Children who have been in the country describe ways of obtaining water other than that employed in the city. They relate personal experiences, study pictures, and discuss springs, rivers, lakes, and wells as sources of supply. A sketch of the well sweep is made in the art period to accompany a short written description of primitive means of securing water. In their reading (Hall, *The Story of Chicago*) the children learn that because people were careless the water in wells and river became impure and much sickness resulted. They also see that the early means of supply were inadequate to meet the needs of a large group of people living close together. The children impersonate the village people and hold a meeting at which they discuss means of protecting the health of the people. A law is made forbidding the throwing of garbage into the river, streets, or vacant lots. The fact that the failure of pioneer methods was due to the rapid growth of the town and to carelessness is made prominent.

The lake as the source of supply is next considered. The children read of the attempts of individuals to supply the people with water by bringing it from the lake in water carts. They see that this was a poor plan because the water was dipped from the surface near the shore and because it cost too much. The pier system, planned and directed by a number of profit-sharing individuals, is

next studied. A map, locating the pumping station and the pier of the first water system, based on the Water Supply map of 1836, is drawn on the schoolroom floor. The children represent the pier with a few boards, blocks, and a section of water pipe. Some of the questions considered here are, "Did this system supply clean water?" "Could it be depended upon?" "Was the supply sufficient to meet the needs of a growing city?" In the free discussions accompanying the study of the map and the building of the pier the following points are brought out: the water was not pure because it came from too near the surface and because the southward current of the river swept the refuse down to the intake pipe; the system could not be depended upon in winter, as the water in the pipes froze; the system could not be enlarged to meet the needs of the rapidly growing city; it was too expensive for everyone to use water freely. Mention is made of the fact that the attempts of individuals and of corporations to supply the people with water had failed.

At this point the children are eager to know how the problem was finally solved. Questions similar to the following are asked to direct the thinking and to prepare them for a study of the present system: "What things must be true of a successful water system?" "Where in the lake do you think the water is cleanest?" "Why?" "Could pipes be laid away out there?" "Why not?" "What ways can you suggest for bringing the cleaner water from so far out in the lake?" "How could the freezing of the water pipes be prevented?" "How could the cost be reduced?" A description of Mr. Chesbrough's plan is then read by the children. A model of the crib is made, and the system is worked out on the sand table and represented on the blackboard.

The children know that the proper disposal of sewage was still a troublesome question. They know that sewers emptying into the Chicago River had been laid. They see that the lake water could not be clean so long as the river, carrying this sewage, flowed into it. In order to show the children how the lake has been made to sweep out the Chicago River, use is again made of the sand table. The children build the Chicago plain and the westward slope. They trace the Chicago River and the Des Plaines and Illinois

rivers. They are helped to see that the land over which the Chicago River flowed must have had a gentle slope, although it appeared so level. Such questions are asked as: "Into what did the Chicago River flow when Chicago was a fur-trading post?" "What was the condition of the water in the river at that time?" "How did the river later help to cleanse the city?" "What effect did this have upon the condition of the river water?" "Should we expect, then, to get pure water from the lake?" "In which direction do the Des Plaines and the Illinois rivers flow?" "How do you know?" "What prevents the Chicago River from flowing west, too?" "How could this difficulty be removed?" Then the children read of the building of the Drainage Canal and its successful completion and make the canal on the sand-table model.

Thus, from the study of models and drawings, from reading and discussion, the children are led to a more definite understanding of the present complicated and efficient system. Attention has also been called to the advisability of municipal control of such a necessity as water instead of allowing money-making concerns to assume control. Throughout the study of problems arising from the needs of many people living so close together the ideas of personal helpfulness and responsibility are emphasized.

When the study of Chicago is completed, each child has his own Chicago Book containing written descriptions, original stories, bits of dramatization, verses, sketches which were made in the art period, and pictures which he has collected as illustrations.

The following table of contents is copied from such a book, together with explanatory notes.

TABLE OF CONTENTS

1. Lake Michigan (a picture)
2. Before White People Came (written description)
3. Early Chicago (a map which was first made on the sand table)
4. Making the Portage (a sketch)
5. Trading Posts (written composition)
6. The Indian Council (mimeographed record of dramatization)
7. Fort Dearborn (picture)
8. Building Fort Dearborn (written composition)

9. Why People Thought Chicago Would Be a Big City (written composition)
10. Pack Horse (a sketch)
11. How Pioneers Traveled (written composition)
12. Prairie Schooner (a sketch)
13. How People Travel Today (written composition)
14. Pictures of Street Cars, Trains, and Automobiles
15. People Whom Chicago Honors (mimeographed papers)
16. Chicago Harbor (map)
17. The Pioneer (verse)
18. Pioneer Times: the Country Store; Lighting; Heating and Cooking; the Mail; the Water Supply (compositions)
19. The Tunnel and Crib System (compositions and diagrams)
20. Purifying Water (written record of experiments)
21. Things Which Helped to Make Chicago a Big City (written composition)
22. Beautiful Chicago (pictures)
23. Plan of the City

OUTLINE OF SUBJECT-MATTER

I. The story of early Chicago:
  1. French and Indian fur traders
    A. The Indians
      1) Food
      2) Clothing
      3) Shelter
      4) Occupations
    B. The French
      1) Life and dealings with the Indians
      2) Voyages along water paths in search of furs
        a) Portages
      3) Trading posts established
  2. The Chicago River post
    A. Reasons for the location of a fur-trading post at Chicago
      1) The meeting of many paths furnishing easy access to interior and transportation to St. Lawrence River markets
        a) Lakes
        b) Rivers
        c) Short portage to other rivers
      2) Nearness to wood, swamp, and prairie areas where fur-bearing animals are found
      3) Indian fur gatherers of the region

B. Life and appearance of the Chicago post and of the Mission
   1) Indian lodges
   2) Fur traders' huts
   3) The Guardian Angel Mission
   4) The coming and going of priests and trappers
   5) Councils with Indians
   6) Other activities
      a) Bartering for furs
      b) Building shelters
      c) Curing skins
      d) Preserving meats
      e) Caring for gardens
      f) Fishing
      g) Sports

3. The building of Fort Dearborn and the beginning of the village
   A. Treaty with the Indians through which the American government obtained the site
   B. Coming of the soldiers
   C. Building the fort
   D. The coming of the Kinzie family
      1) The Kinzie home
         a) Old-fashioned fireplace
         b) The making of candles
      2) Mr. Kinzie's relations with the Indians
      3) Fur trade carried on by Mr. Kinzie
   E. Other families
   F. Visits of ships with supplies
   G. Social life of the village

4. Unrest of the Indians
   A. Indians resent appropriation of their hunting-grounds
   B. Attempts to drive out the white settlers under the leadership of Tecumseh
   C. The massacre
      1) Black Partridge
      2) Captain Wells

5. Rebuilding of the fort and the growth of the village
   A. Fort rebuilt
   B. Return of former settlers
   C. Coming of new settlers
      1) Boats
         a) Lake schooners
         b) Flatboats

2) Overland travel
a) Pack horses
b) Oxcarts
c) Prairie schooners
d) Stagecoaches

D. Survey made for a canal at the old Indian portage
1) The importance of such a canal to Chicago and the West
a) Cultivation of lands to south and west
b) Chicago a great shipping center

II. Development of the city following the cessation of Indian hostilities:
1. Black Hawk and the last desperate stand of the Indians
2. Building the harbor
3. Laying out of the town
A. Selling lots
B. Building homes
1) Source of material
C. Laying out streets
D. The first sewers
4. Growth of business
A. Completion of canal
1) Produce sent to Chicago in flatboats
B. Roads leading to Chicago
C. Building of railroads
D. Beginning of Chicago's industries

III. Care of the city and its people:
1. Water supply
2. Sewerage system
3. Fire protection
4. Police protection
5. Lighting
6. Transportation
A. Roads
B. Bridges
C. Evolution of street car
7. Schools
8. Parks and other recreation centers

REFERENCE BOOKS

For the teacher:

Kirkland, *History of Chicago.*
Andreas, *History of Chicago.*
Blanchard, *The Northwest and Chicago.*

Parkman, *LaSalle and the Great West.*
———, *Discovery of the West.*
Salisbury and Alden, *Geography of Chicago and Its Environs.*
Kinzie, *Waubun.*
Markham, *The Real Romance of American History.*
Mather, *The Making of Illinois.*
Catherwood, *Heroes of the Middle West.*
E. O. Gale, *Reminiscences of Early Chicago.*

For the children:

Hall, *The Story of Chicago.*
Atkinson, *The Story of Chicago.*

Reading-slips:

Chicago One Hundred Years Ago
The Water Supply

The following is one of these reading-slips:

READING-LESSON

Long ago there were no white people living where Chicago now stands. There were no houses. Only Indian wigwams grouped together in villages dotted the region. There were no streets other than the Indian trails which wound around the marshy places and out on the prairie. There were no street cars nor railroads. Railroads were not needed then for steam cars were not known. At night there was no light but that of the moon and stars. The great lake and the river were here, but only Indians in their canoes were seen going up and down them. Trees grew along the river in some places. Toward the north lay thick woods. Low sand hills dotted with cedar and juniper bushes lay along the lake shore. In the swamps which bordered the lazy river grew cat-tails, wild rice, and other tall reedlike grasses. From these swamps rose flocks of wild ducks and geese. Other birds, such as the snipe and heron, fed there. Dragon flies and other swamp insects flew here and there or lit on the tall grasses.

Stretching away from this swampy area toward the west and south lay wide prairies where herds of buffaloes sometimes fed. Prairie chickens made their nests and ran among the tall feathery grasses which waved there. Rabbits, too, hid among them.

Perhaps the Indians found this as good a place for homes as we do now. There was plenty of small game here. Here the Indian women gathered wild rice. From here water paths stretched in nearly every direction to good hunting-grounds.

Standards of attainment.—At the end of the third grade the children have gained:

I. An idea of—

a) certain topographical features

b) relative location

c) the influence of natural resources upon the occupations of a people

d) the influence of environment upon the mode of life of a people

e) the immediate needs of a community as dependent on local conditions.

II. Some appreciation of the struggles of the pioneer and of the labor that has gone into the making of the modern city.

Time.—In the second semester this subject is given one half-hour daily.

RHYTHM IN HANDWRITING

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INTRODUCTION

The problem in this study is to discover the amount of rhythm that exists in the handwriting of school children and the relation that rhythm bears to age. The importance of this problem was impressed upon the investigator by an experimental study made in the University of Chicago laboratory for the purpose of extending the earlier experiments of Dr. Freeman.[1] The results of this preliminary study seemed to warrant certain tentative conclusions with regard to the relation of rhythm to the problem of teaching handwriting. Since rhythm seemed to be related to age, there must be an age of maximum rhythmic development. This age is probably the time at which intensive writing drills should be introduced into the training of children. Writing systems must be adapted to the natural rhythmic development of children else they have no claim upon educational practice.

In addition to the problem of discovering the part that rhythm plays in the child's development in writing, this study was undertaken to discover the amount of arm movement employed by children in their writing, and its relation to age. If arm movement is valuable and is related to age, then there must be an age at which intensive arm-movement drills will net the best results. On the other hand, if rhythm is the important element and if arm movement is not related to rhythm, then arm-movement drills may be practically a total loss so far as their effect upon skill in writing is concerned. This study undertakes to establish rather conclusively just the relations that exist between these various factors and the bearing that the established relations should have upon educational practice in teaching handwriting.

[1] *Yale Psychological Studies*, New Series, II, No. 1. *Psychological Monographs*, XVII, 1914.

SOURCES OF SECURING RECORDS

In order to determine what influence special training may have upon the development of arm movement and upon the development of rhythmic habit, records were secured from schools that are representative of different types of effort in this respect. Schools in which special movement drills have been emphasized for a number of years, and schools in which only ordinary copy-book practice has been employed for a considerable period of time were studied.

1. Records were secured from the following schools: one of the ward schools of Kansas City, Kansas, which has used the Ransomalian writing system for a number of years; two ward schools of Topeka, Kansas, in which the Palmer system has been used for a number of years; Winfield, Kansas, which has used the state copy-book system for several years; Mattoon, Illinois, which has used the Berry copy-book system for several years; two ward schools of Grand Rapids, Michigan, in which the Palmer system has been used for a number of years.

2. Records were secured in all of these schools from the second to the eighth grades inclusive and from the ages of seven to fourteen inclusive.

3. The securing of these records under normal conditions was made possible only by the courtesy and earnest co-operation of the superintendents, principals, and teachers of the schools named above, therefore credit for the success of the study is in a large measure due them. For invaluable assistance in securing normal records from the younger children and for much painstaking clerical help in the measuring of the records, I am indebted to Mrs. Nutt.

APPARATUS AND METHOD OF TAKING A RECORD

The purpose of the apparatus was to secure a specimen of the writer's handwriting, a record of the amount of arm movement employed in writing the copy, and a record of the movement of the writer's pencil so spread out from left to right upon a strip of paper moving at known speed as to make possible the measuring of the time taken for the writing of each stroke. The mechanism of the apparatus afforded a means of measuring speed by providing underneath the sheet of paper on which the subject wrote a

typewriter-ribbon belt moving from right to left and directly beneath the ribbon a moving strip of paper on which a traced record was received. Thus, when the writer wrote upon the stationary sheet of paper, the path of the pencil-point was made upon the moving strip of paper. The speed of the strip of paper was recorded by tracing on it the path of an electrically driven vibrating pen. This path is called the time line.

The arm movement was recorded by attaching a system of levers to the back of the hand, by means of an elastic band about the hand, through which the movement of the hand was transmitted to a pen writing on another sheet of paper. This mechanism was kept so accurately adjusted that an almost perfect reproduction of the written copy was secured if the writer was using no finger movement.

MEASUREMENT OF THE RECORDS

1. The quality of the writing specimens was graded according to both the Freeman and the Ayres scales. Both grades were recorded and indicated by the letters *F* and *A* respectively.

2. The arm movement records were graded by means of a scale which was worked out from the total number of specimens to be graded. The scale grades from zero to five as shown by the reproduction of the scale given in Fig. 1.

3. The time taken in the making of each stroke of the word "bravely," which was the copy used throughout the study, was determined by superimposing a traced copy of the word over the record on the moving strip of paper, which was made through the typewriter ribbon. By this procedure it was possible to bring the path of the pencil under the written copy. By moving the belt forward from right to left each point in the recorded path could be made to coincide with the corresponding point made by the pencil at the same time in the written word. The procedure was to set the moving strip in such a position that the traced record fell under the beginning of a stroke in a writing, and then moving it along until it reached the end of the stroke, to count the number of vibrations in the time line which passed a fixed point. Each vibration on the time line represented 1/35 second, and the time could be calculated in 1/100 second.

4. The degree of rhythm manifested in each record was graded by weighing three considerations, namely, the largest number of strokes made in the same length of time, the number of groups into which the duration of the strokes fell, called the time groups, and the range of the time groups. The largest number of strokes made

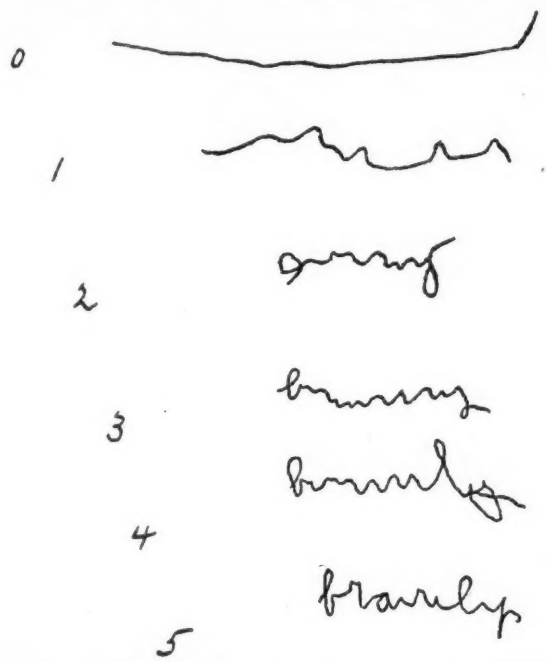

FIG. 1.—Arm movement scale. Each specimen on the scale represents the tracing of the arm movement of some individual in writing the word "bravely." The first specimen, 0, represents no arm movement in forming the letters. The last specimen, 5, represents almost complete arm movement.

in the same length of time was found to range from 4 to 22, a range of 19 steps. The grades given for the largest number of strokes therefore range from 1 to 19. The number of time groups for making all the strokes ranged from 11 down to 2, a range of 10 steps. The grades for the number of time groups therefore range from 1

to 10. The range in difference of time between the shortest and the longest time for making a stroke that was employed by the respective writers was found to be from 10/100 second to 180/100, a range of 18 steps, since the time groups were each 10/100 second in range. Therefore the grades for the range of time groups range from 1 to 18. The total grade for rhythm was found by multiplying together the respective grades for the three items just given.

5. The average time per stroke was taken as the record for speed.

TABULATION OF RESULTS

The grades in rhythm, quality, and arm movement, the length of time for each stroke and the length of the line in each stroke of each letter written, and the speed for each individual were recorded by ages and by systems to be used as the source material from which all correlations were worked out. A sample sheet from Table I shows individual cases.

The significance of the results can be seen in a series of tables which are so constructed as to bring out certain relationships. The principle on which the tables are constructed is the same in all, and may be made clear by commenting on Table II. In this table each number represents a group of individuals. These individuals are classified and placed in the table on the basis of two sets of facts, age and the score in arm movement. All the pupils in a given horizontal row are of the same age, but they are distributed along the row according to their arm-movement grade. Similarly, all those getting a particular grade in arm movement are placed in a given vertical column, but they are distributed within this column according to age. It is clear that if the amount of arm movement increases as the child grows older the numbers will group themselves with greater or less closeness about a diagonal line from upper left to lower right. It is evident that this is true in Table II. There are practically no young children who use a large amount of arm movement, and scarcely any of the older ones use no arm movement. The other tables are to be interpreted in the same manner. All ages have been tabulated in each of the tables from four to eight

inclusive, but only one age is given from each here as an illustration, since they are typical of all ages.

TABLE I

Individual cases: time T, in hundredths of a second; length of line L, in millimeters; average time per stroke, Sp (speed); arm movement, A.M.; Quality, Qual. F (Freeman), Qual. A (Ayres); Rhythm, Rthm; School systems, A, B, C, D, E.

	System A								System B			
	Age seven								Age seven			
	T	L	T	L	T	L	T	L	T	L	T	L
b	64	18	17	19.2	118	23	44	18	24	6	164	14
	54	9	24	17	71	20	36	14	34	9	42	11.5
	25	6	61	7	51	9	39	7	19	4.3	16	10
	21	3	26	4	22	3	14	2	13	1	18	4.1
r	28	6	83	6	32	7	20	8	15	4.3	14	7.4
	29	9	74	4.8	24	4.2	52	6.5	20	1	30	7.3
	25	6.5	54	4.5	64	7.3	31	10	9	2.4	18	7.8
a	110	13.5	102	10.5	81	13.5	32	16	23	5	22	11
	13	12	86	8.5	50	11	29	11	40	4.1	13	10.3
	22	11	70	6	25	8.5	25	10.6	32	3.2	26	6
	27	7.5	43	4	34	8	43	7.5	22	2.3	28	4.1
v	34	13.5	82	10	63	10.5	8	12	39	6	24	7.5
	33	5.9	71	11.5	38	8	46	7	31	4	22	7.6
	25	8.1	54	5.5	42	10.5	37	9	28	5.1	14	7
	26	2	65	3	17	3	22	4	24	1.4	9	4
e	12	7	38	5.3	81	6	29	8.3	18	3.7	24	7.3
	50	11	69	4.5	28	7	33	7.2	31	7	23	9
l	81	23	75	13.5	96	27	8	19	41	12.4	42	16
	54	16	61	11	30	21	30	16	22	12	13	13
y	67	11	64	5	34	10	16	9	8	3	23	7
	24	6	32	4	20	7	23	5.6	7	2.5	9	6.1
	20	10	40	6	37	11	12	8	15	5	12	7
	24	16	25	14.4	45	18	34	18.5	19	11	16	17.4
	44	21	111	20	76	23	38	25	25	13	24	22.5
Sp	38		59		49		28		22		26	
A.M	1		0		1		1		1		5	
Qual. F	27		21		18		20		15		8	
Qual. A	70		80		40		60		30		20	
Rthm	320		54		36		336		525		108	

INTERPRETATION OF RESULTS

1. *The relation of arm movement to age.*—Table II shows quite clearly that arm movement and age are closely correlated. Grade 1 on the scale indicates that the arm moves a very little in the

direction of forming the letters. Very few of the younger children, ages seven to nine, make a grade above 1 in arm movement, while a considerable number of the older children make a grade of 2 and above. This bunching of the younger children around the lower end of the scale and the corresponding bunching of the older children around the upper end shows that age is an important condition in the development of arm movement.

TABLE II

. RELATION OF ARM MOVEMENT TO AGE

Age	Arm-Movement Grade					
	0	1	2	3	4	5
7	10	21	2	.....	.....	1
8	10	19	4	.....	.....	.....
9	3	14	5	7	1	.....
10	2	20	4	3	1	2
11	6	14	8	2	5	1
12	.....	11	12	7	1	2
13	1	14	10	6	5	1
14	1	16	10	4	4	3

The tabulation of the arm-movement grades by systems, which is not shown here, brings out the fact that much the same characteristic grouping of cases exists in each system. None of the systems develops any appreciable degree of arm movement in the younger children. The systems in which the arm-movement drills were emphasized by the teachers, but in which no special supervisor was employed, developed practically the same amount of arm movement in the children from ages ten to fourteen as was developed by the copy-book systems. The system in which the special supervisor was employed developed a somewhat greater degree of arm movement in the nine-year-old children and a greater amount of movement in the upper ages.

2. *The relation of age to rhythm.*—Table III shows that age and rhythm are in close correlation. The distinct sweep of cases along the diagonal downward from left to right is clear evidence of the high degree of correlation between age and rhythm.

TABLE III

CORRELATION OF RHYTHM TO AGE

Rhythm	Age							
	7	8	9	10	11	12	13	14
4– 159	14	5	3	.....	1	.....	1	.....
160– 313	5	3	.....	1	1	.....	.....	.....
314– 467	8	1	3	.....	.....	1	1	.....
468– 621	3	3	6	3	4	1	.....	1
622– 775	3	6	3	5	1	.....	.....	2
776– 929	1	2	.....	4	2	1	1	2
930–1,083	.....	4	2	1	2	4	.....	2
1,084–1,237	.....	.....	2	5	2	2	6	.....
1,238–1,391	.....	3	3	5	.....	2	2	5
1,392–1,545	.....	4	4	4	8	.....	6	6
1,546–1,698	.....	.....	1	3	3	5	1	1
1,699–1,853	.....	1	.....	1	4	6	3	6
1,854–2,007	.....	.....	2	.....	4	3	4	5
2,008–2,161	.....	.....	1	.....	3	2	4	3
2,162–2,315	.....	.....	1	.....	.....	3	1	1
2,316–2,469	.....	.....	1	.....	.....	2	4	1
2,470–2,663	.....	.....	.....	.....	.....	.....	1	2
2,664–2,777	.....	.....	.....	.....	.....	.....	.....	.....
2,778–2,931	.....	.....	.....	.....	.....	1	1	.....
2,932–3,085	.....	.....	.....	.....	.....	.....	1	.....
3,086–3,240	.....	.....	.....	.....	.....	.....	.....	1

3. *The relation of rhythm to arm movement.*—Table IV shows that there is no correlation between rhythm and arm movement. The cases are too evenly distributed at each age to show correlation.

TABLE IV

CORRELATION OF RHYTHM TO ARM MOVEMENT

Rhythm	Age Seven: Arm Movement					
	0	1	2	3	4	5
4– 159	4	8	1	.....	.....	1
160– 313	3	2	.....	.....	.....	.....
314– 467	2	6	.....	.....	.....	.....
468– 621	1	2	.....	.....	.....	.....
622– 775	1	1	1	.....	.....	.....
776– 929	.....	1	.....	.....	.....	.....
930–1,083	.....	.....	.....	.....	.....	.....
1,084–1,237 to 3,086–3,240	.....	.....	.....	.....	.....	.....

4. *The relation of arm movement to quality.*—Table V shows such a general distribution of cases at each age and according to the grades assigned by both scales employed that no appreciable correlation exists between arm movement and quality.

TABLE V

RELATION OF ARM MOVEMENT TO QUALITY, FREEMAN'S SCALE

Quality	Age Seven: Arm Movement					
	0	1	2	3	4	5
6–10	5	5	1	.....	.....	1
11–15	1	7	1	.....	.....	.....
16–20	2	8	.....	.....	.....	.....
21–25	1	.....	.....	.....	.....	.....
26–30	.....	1	.....	.....	.....	.....

5. *The relation of rhythm to quality.*—Table VI shows the same sort of general distribution of cases as is seen in Table V, so that the same conclusion is reached that there is no correlation between rhythm, in the sense in which it is here used, and quality.

TABLE VI

RELATION OF RHYTHM TO QUALITY, FREEMAN'S SCALE

Rhythm	Age Seven: Quality Grade				
	6–10	11–15	16–20	21–25	26–30
4– 159	6	3	4	1	.....
160– 313	2	1	2	.....	1
314– 467	2	3	2	.....	.....
468– 621	1	1	1	.....	.....
622– 775	2	.....	1	.....	.....
776– 929	.....	1	.....	.....	.....
930–1,083 to 3,086–3,240	.....	.....	.....	.....	.....

6. *The relation of speed to arm movement.*—Table VII presents again such a general distribution of the cases that no correlation is shown.

TABLE VII

RELATION OF SPEED TO ARM MOVEMENT

Arm Movement	Age Seven: Speed (Average Time per Stroke, Hundredths of a Second)					
	64–75	53–63	42–52	31–41	20–30	8–19
0	1	1	4	3	2	.....
1	2	1	5	5	7	.....
2	.....	1	.....	.....	1	.....
3	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....

7. *The relation of speed to rhythm.*—Table VIII shows a distinct sweep of cases at each age along the diagonal downward so that a high degree of correlation of speed to rhythm is shown.

TABLE VIII

RELATION OF SPEED TO RHYTHM

Rhythm	Age Seven: Speed (Average Time per Stroke, Hundredths of a Second)					
	64–75	53–63	42–52	31–41	20–30	8–19
4–159	3	2	7	1	1	.....
160–313	.....	.....	3	2	.....	.....
314–467	.....	.....	.....	5	3	.....
468–621	.....	.....	.....	.....	3	.....
622–775	.....	.....	.....	.....	3	.....
776–929 to 3,086–3,240	.....	.....	.....	.....	1	.....

PSYCHOLOGICAL AND PEDAGOGICAL INFERENCES

1. The fact that arm movement is so closely correlated to age seems to justify the conclusion that children naturally use finger movement first in their writing. Training in special arm-movement drills does not change the nervous system of the child and does not change the character of the natural co-ordinations. From age ten on a considerable number of the cases naturally adopted arm movement and developed a considerable degree of skill as compared to those who had been given special training in arm movement. Also from age ten on a good many children neither naturally nor by training attained a grade in arm movement above 1. Furthermore, arm movement is not correlated to quality, rhythm, or speed. In the light of these three facts, the question naturally arises, is arm movement worth while? The answer seems obvious enough so far as its value goes in promoting quality, speed, and rhythm. The fact that a good many children naturally adopt arm movement as they become more mature seems to argue that it has other values than those just noted. If this is true, what are these values, and are they values that are important enough to justify an intense effort to attain them on the part of those who do not naturally adopt arm movement? Until this question has been scientifically answered, the conclusion seems warranted that arm movement

should be left to individual selection and development. If, however, school people believe that the benefit of the doubt should be on the other side and therefore wish to continue the intensive use of arm-movement drills in the teaching of writing, then the conclusion is that these drills should not be given in general before the child is ten years old or above. Exception might be made in those cases of younger children who of their own accord naturally adopt the arm movement. On the same ground of natural selection children who naturally do not select arm movement as they mature might be exempted from the arm-movement drills.

2. Rhythm is correlated to age to so high a degree that it must play a large part in the development of any kind of skill that employs co-ordinations of hand and arm. Rhythm and speed are so closely correlated that the logical conclusion seems to be that speed cannot be forced ahead of the natural development of rhythm. The results do not show, however, that speed may not be the primary factor. Hence the desire for speed and intensive efforts to secure it may bring about the rhythmic habit as the means of securing the desired result. Whichever may be the primary factor, the significance of their correlation for educational practice in the teaching of writing remains the same, namely, that writing exercises that are intended to secure speed, and the standards of attainment in speed, must be carefully adapted to age as the dominant condition in rhythm.

Although age is the chief condition in the development of rhythm and speed, the relation of these factors to age by systems seems to indicate that the type of training given may have some effect upon their development. System C, for instance, seems to develop more rhythm than any of the others, while system B seems to develop more speed than any other system. Just what the elements in each of these systems are that may have produced these varying degrees of rhythm and speed is not shown by this study. There are no norms or standards for rhythm and speed, hence it is impossible to say what the degree of correlation is between these two factors that insures the best results in handwriting. System C may be producing the normal degree of rhythmic habit at the expense of quality. System B may be securing too high a degree of speed

or it may have the right relation of rhythm to speed. The significant point is that any system of training that is valid ought to be able to insure what habits it will develop and to insure that these habits are the fundamental ones at each stage of development. If the system cannot demonstrate itself on a truly scientific basis, its claim upon educational practice is open to serious question.

Rhythm is not correlated to quality, and since rhythm develops with age it will be likely to resist any kind of training that tends to break it up. If certain letters contain strokes that are abrupt in their junction with one another, or are abrupt in their junction with the first stroke of any successive letter, the dominance of the rhythmic habit will tend to cause the writer to slur over the difficulty. This fact presents a critical point in the problem, namely, how can rhythmic habit be employed in writing so as not to interfere with the securing of a desired degree of quality?

The difficulty of the problem is increased by the fact that speed tends to cause this same sort of slurring over the difficult junction of strokes. Speed is correlated to rhythm, hence the more the rhythmic habit matures the greater the natural development of speed; and the greater the development of both rhythm and speed the greater the tendency to slur over the difficulties in letter formation so that quality is sacrificed. This conclusion seems to be supported by the general observation of the writing habits of adults. Most adults employ writing under conditions that demand their maximum of speed. In order to meet the demand for speed they slur over the difficult places at the sacrifice of good letter formation, alignment, and spacing. This is true even in the case of adults who have been well trained in penmanship.

In the light of these considerations certain conclusions may be drawn.

1. Parallel standards of quality and speed should be worked out for each grade. These standards should be adapted to the reasonable demands that may be made upon pupils to use writing as a means for getting along well in their studies, and should take into account the different groups of rhythmic habit in each grade. That is to say, these parallel standards should be so graded and correlated that pupils will neither sacrifice speed to too great a degree for the

sake of quality nor sacrifice quality to too great an extent for the sake of speed, but that for each group of writers there shall be a balanced speed-quality standard of attainment which shall be strictly possible because of normal rhythmic habit and conceptual habit of form found in each group.

2. Written forms should be so analyzed as to discover the particular letters and parts of letters that tend to be slurred over when speed and rhythmic habit assert their dominance. These having been determined, special drills should be devised for each grade that will thoroughly develop the speed-quality standard adapted to each grade in the writing of these forms.

3. Attention should be given to the possibility of modifying the conventionality of these forms so as to utilize both rhythm and speed in securing the highest relative standard of quality in each grade.

4. Written work in the different grades should be reduced to the minimum and should be employed under conditions that will not make greater demands upon speed than are in keeping with the speed-quality standard adapted to each grade. This will mean little or no written work in connection with class recitations and individual preparation of lessons in the first three grades.

5. A period of intensive writing drill, for the purpose of securing the maximum speed-quality standard of attainment, should be provided for at the approximate age at which rhythmic habit reaches its maximum of development.

Certain investigations and experiments will be necessary in order to bring about the ends that the conclusions given above set up.

1. An experimental study should be made to determine the size of letters, the slant, the modifications of letters, and the methods of teaching that will utilize the rhythmic habit at every stage in securing the adopted speed-quality standard of attainment.

2. This study in rhythm should be extended to the upper ages of adolescence to discover the age at which rhythmic habit reaches its maximum development.

3. A thorough test should be made of the maximum speed-quality standard that may be attained by means of intensive writing

drills at this age. This test should determine the length of time necessary for the attaining of desired efficiency and the methods of instruction that are most effective.

4. An experimental study covering a period of four or five years should be conducted to determine the results that may be obtained by making the learning of written forms a part of the work in drawing during the first three years of school work. The first step in learning to make letters is drawing. The purpose of this study, therefore, should be to discover the stages of development in building up accurate concepts of the forms of the writing conventions and the time at which drawing skill becomes facile enough to be employed as writing.

TESTS IN EFFICIENCY IN ARITHMETIC

A COMPARISON OF THE RESULTS OBTAINED IN THE RURAL SCHOOLS OF SANTA CLARA COUNTY AND RESULTS OBTAINED IN A COUNTY IN SOUTHEASTERN OHIO[1]

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In the June number of the *Elementary School Journal* is a very interesting study entitled, "Tests of Efficiency in the Rural and Village Schools of Santa Clara County, California." Especially interesting is this article to those who are dealing by like methods with the problem of supervising rural schools in other parts of the country. In view of the fact that Mr. Zeidler in his introduction lamented that it was not possible for him to make a comparison of the results which he obtained with the results obtained in other rural sections of the country, the following distribution tables, comparative tables, and charts have been prepared.

Since Mr. Zeidler has explained so carefully the nature of the tests and the methods employed in giving them, it is not necessary to enter into a discussion of the same at this point. However, it may be best to state that the tests were given under as normal conditions as could be attained. The greater majority of the children were tested between December 1, 1915, and February 1, 1916.

RESULTS OF THE TEST

Table I shows the distribution of children as to the number of examples attempted. It also shows the distribution of scores by grades for the four subjects, addition, subtraction, multiplication, and division, and the median score obtained in each case. One of the striking points of similarity between the table given by Mr. Zeidler and Table I is the wide range of distribution.

[1] These tables were taken from a study that was made last year under the direction of Dr. W. L. Gard, department of history and science of education, Ohio University.

TABLE I
ADDITION (TIME, 8 MINUTES)

TABLE I

ADDITION (TIME, 8 MINUTES)

Grade	Total Papers	Number of Examples Attempted																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	116	3	....	1	....	8	9	26	22	18	12	8	4	1	2	1	....	....	....	1	....	....	....	....	....	....	7.5
VII	123	....	....	1	7	13	20	33	14	11	7	11	4	....	1	1	....	....	....	....	....	....	....	....	....	....	6.7
VI	87	1	....	4	8	10	14	17	13	9	8	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6.5
V	162	....	3	5	19	30	25	38	24	12	4	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	6
IV	169	4	19	26	38	33	22	14	5	4	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3.9

SUBTRACTION (TIME, 4 MINUTES)

Grade	Total Papers	Number of Examples Attempted																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	115	2	....	1	2	3	2	4	13	17	13	12	8	13	10	3	3	2	2	1	1	1	1	....	1	....	10.1
VII	122	....	....	2	5	1	10	14	23	21	14	10	10	4	3	1	1	1	1	....	....	....	1	....	....	....	8.3
VI	87	....	1	5	2	8	8	15	18	16	6	4	2	....	1	....	1	....	....	....	....	....	....	....	....	....	7.3
V	160	1	2	8	16	34	29	28	13	16	8	2	1	1	....	1	....	....	....	....	....	....	....	....	....	....	5.7
IV	168	7	18	28	28	28	25	20	9	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.1

MULTIPLICATION (TIME, 6 MINUTES)

Grade	Total Papers	Number of Examples Attempted																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	115	1	....	....	3	3	16	11	11	10	16	11	15	7	5	2	1	2	....	1	....	....	....	....	....	....	9.2
VII	121	....	1	3	4	7	19	24	13	17	13	9	7	1	1	1	....	1	....	....	....	....	....	....	....	....	7.2
VI	87	0	3	2	5	9	20	18	12	10	2	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6.2
V	162	5	14	34	16	23	27	22	13	3	3	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	4.5
IV	169	20	23	50	29	21	13	6	1	3	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.8

DIVISION (TIME, 8 MINUTES)

Grade	Total Papers	Number of Examples Attempted																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	115	2	1	2	1	13	14	8	13	18	7	9	4	6	3	5	2	5	....	1	....	....	....	....	1	....	8.2
VII	121	....	4	7	19	21	24	17	12	9	2	3	2	....	....	....	1	....	....	....	....	....	....	....	....	....	5.4
VI	87	4	6	9	15	25	12	6	6	2	0	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.4
V	162	15	24	36	35	33	11	3	2	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	3.2
IV	169	76	42	18	16	9	5	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.2

TABLE II

Addition (Time, 8 Minutes)

Grade	Total Papers	Number of Examples Worked Correctly																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	116	12	9	19	19	17	11	12	7	4	5	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3.9
VII	123	22	19	21	15	13	12	12	2	1	2	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	3.0
VI	87	18	10	12	17	10	7	9	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.2
V	162	34	37	30	25	17	8	3	4	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.36
IV	169	81	38	17	16	11	3	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.1

Subtraction (Time, 4 Minutes)

Grade	Total Papers	Number of Examples Worked Correctly																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	115	5	....	5	9	12	15	8	11	16	8	9	7	2	3	3	....	....	....	2	....	....	....	....	....	....	7.3
VII	122	8	5	14	10	17	21	13	6	7	6	6	4	1	2	....	1	....	....	1	....	....	....	....	....	....	5.4
VI	87	17	10	9	14	14	8	5	2	2	5	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	3.6
V	160	56	30	25	20	10	3	6	4	3	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.0
IV	168	100	30	17	9	6	5	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0.8

Multiplication (Time, 6 Minutes)

Grade	Total Papers	Number of Examples Worked Correctly																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	115	3	4	14	12	8	20	10	17	8	8	7	0	2	....	....	1	....	....	1	....	....	....	....	....	....	5.8
VII	121	14	12	17	11	14	23	17	7	2	1	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	4.5
VI	87	20	14	7	14	14	9	4	1	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.2
V	162	65	28	31	15	8	5	2	4	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.6
IV	169	115	31	10	8	4	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0.7

Division (Time, 8 Minutes)

Grade	Total Papers	Number of Examples Worked Correctly																								Median Score
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
VIII	115	5	4	7	13	10	14	11	12	3	7	8	4	5	6	1	1	2	....	1	....	1	....	....	....	....	6.4
VII	121	15	20	22	15	14	12	10	6	4	2	0	....	....	....	1	....	....	....	....	....	....	....	....	....	....	3.3
VI	87	24	20	14	11	7	5	3	....	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
V	162	86	38	16	11	8	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0.9
IV	169	141	10	13	4	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0.6

In Table II the examples worked correctly have been distributed in the same manner as in the previous table. In comparing

TABLE III

Median Score of Attempts					Median Score of Accuracy			
Addition					Addition			
V	VI	VII	VIII		V	VI	VII	VIII
6.6	7.4	8.1	10.2	Indiana	3.6	4.4	4.9	5.8
6.7	8.4	9.2	10.2	Detroit	3.9	4.6	5.4	6.7
7.2	8.3	9.2	11.0	Boston	3.7	4.9	5.6	7.8
6.0	8.1	8.7	9.8	24 cities of Kansas	3.1	5.3	5.8	7.0
5.5	6.1	7.5	8.8	Santa Clara County	1.8	2.3	3.5	4.3
6.0	6.5	6.7	7.5	Rural schools of a county in southeastern Ohio	2.4	3.2	3.0	3.9
Subtraction					Subtraction			
7.3	8.9	10.2	11.2	Indiana	5.0	6.5	7.8	8.9
8.0	8.8	9.8	12.3	Detroit	5.5	6.2	7.3	9.5
7.6	9.0	10.0	11.4	Boston	4.9	6.3	6.9	8.6
6.7	9.1	10.0	11.5	24 cities of Kansas	4.2	7.4	8.3	9.9
5.5	6.4	7.5	9.8	Santa Clara County	2.8	3.5	5.2	6.8
5.7	7.3	8.3	10.1	Rural schools of a county in southeastern Ohio	2.0	3.6	5.4	7.3
Multiplication					Multiplication			
6.3	7.6	8.6	10.2	Indiana	3.9	5.1	5.9	7.3
6.4	7.4	9.6	10.5	Detroit	3.8	4.8	6.0	7.5
5.8	6.9	8.0	9.5	Boston	3.3	4.8	5.1	6.5
5.8	8.1	9.0	10.9	24 cities of Kansas	3.3	6.2	7.0	8.9
3.9	4.8	6.1	7.5	Santa Clara County	1.25	2.5	3.4	4.9
4.6	6.2	7.2	7.2	Rural schools of a county in southeastern Ohio	1.6	3.2	4.5	5.8
Division					Division			
4.5	5.7	8.5	10.6	Indiana	2.6	4.8	6.7	9.1
4.9	6.4	8.6	10.3	Detroit	2.7	4.4	7.1	8.8
4.5	5.8	6.9	8.8	Boston	2.0	3.3	5.1	6.9
4.0	6.5	9.3	10.1	24 cities of Kansas	2.1	5.4	8.1	9.3
3.3	3.8	5.9	7.1	Santa Clara County	0.5	1.6	3.2	4.5
3.2	4.4	5.4	8.2	Rural schools of a county in southeastern Ohio	1.0	2.0	3.3	6.4

the median scores of similar grades in the four fundamentals we again note that the same condition exists as we found above, viz., that the median scores in subtraction are higher than the median

scores in any other of the operations with the exception of Addition V. By Courtis' standard this is as it ought to be.

In Table III the median results that have been obtained in Indiana, Detroit, Boston, and 24 cities of Kansas can be compared with the results obtained in Santa Clara County and those obtained in a county in southeastern Ohio. The medians from the cities mentioned above were obtained from well-organized systems, while, on the other hand, supervision in the rural schools of southeastern Ohio has been in force for only three years. We see at a glance that the results of the cities and the rural districts fall into two distinct groups. This is true not only in the case of speed but in the case of accuracy as well. In fact, there is a far greater difference in the accuracy comparison of the two groups than in the speed comparison. Comparing the two rural groups more closely, we find that the results average very well, for at no point is there a very striking difference, unless it is in the accuracy in Division, Grade VIII.

TABLE IV

Subject	Grade	Rural Schools in a County in S.E. Ohio		Percentage of Examples Correctly Worked		
		Attempts	Rights	Rural Schools in S.E. Ohio	Santa Clara County	24 Cities in Kansas
Addition	VIII	7.5	3.9	52	48.9	71
	VII	6.7	3.0	44.7	46.7	67
	VI	6.5	3.2	49.2	37.5	65
	V	6.0	2.4	40.0	32.5	52
Subtraction	VIII	10.1	7.3	72.3	69.4	86
	VII	8.3	5.4	65.0	69.3	83
	VI	7.3	3.6	49.3	54.7	81
	V	5.7	2.0	35.1	50.9	63
Multiplication	VIII	7.2	5.8	80.5	65.3	82
	VII	7.2	4.5	62.5	55.7	78
	VI	6.2	3.2	51.6	52.1	77
	V	4.6	1.6	34.8	32.1	57
Division	VIII	8.2	6.4	78.0	63.4	92
	VII	5.4	3.3	61.1	54.2	87
	VI	4.4	2.0	45.4	42.1	84
	V	3.2	1.—	31.2	15.1	53

In Table IV a comparison is given of the percentage of the examples correctly worked in the rural schools of a county

in southeastern Ohio, Santa Clara County, and in 24 cities of Kansas.

As we study Table IV or Chart I, one of the most striking points is the low grade of accuracy. Is this state of affairs as it should be? Should we expect a higher percentage of accuracy? Should the boys and girls of a city system of schools make a higher median in accuracy than the boys and girls of a rural district? Is the condition due to the methods employed, or is it due to the small number of pupils in the rural school? Is there as great a degree of exactness required of the rural pupil as of the city pupil, or does this have anything to do with the situation? Is it due to the system, or is there a greater difference in the ability of the city and the rural child? Can the cause be traced to the amount of time spent on this part of arithmetic, or what may be the cause or causes? These are a few of the many questions that face us as we are making our comparisons. Perhaps there are a number of schoolmen out on the field of action at this time who can give valuable information upon this subject.

It would be a mistake to assume that these tests measure every phase of the work in arithmetic. There are reasoning processes which are not touched in these investigations.

Equally mistaken is the view that an inquiry of this type has reached its goal when it has set up a comparison between various parts of the country. Comparison is helpful only when it stimulates some kind of activity in the direction of the correction of defects. Comparisons of other types than that here exemplified are possible. Thus one may trace the changes that take place in the work of a single school during a period of years. In this case the school is compared with itself. Again, mere comparison is not the end of the investigation. Comparison brings out the points at which instructional effort should be redoubled. Tests are sometimes overemphasized, and the results are dwelt on without discrimination. When properly used, measurements are instruments to guide instruction. They are tools to aid in discovering where the weak and the strong points are. Just as a good carpenter has not *one* tool, but a *kit* of them in order to do the best work, so much the more necessary is it that the teacher who is handling boys and

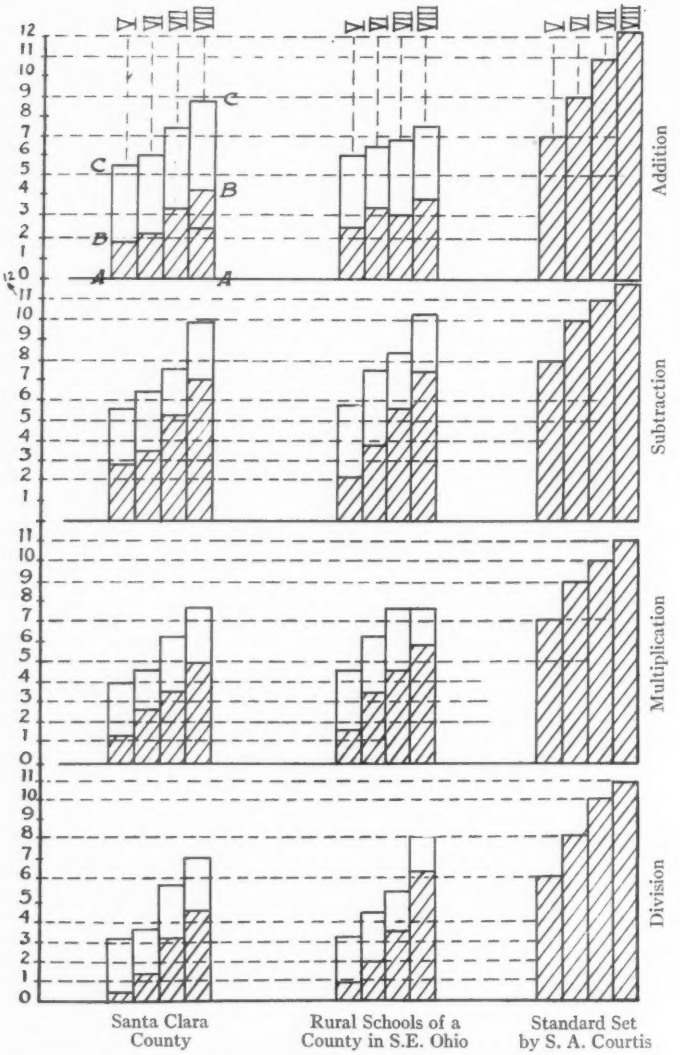

CHART I.—Shows the median of attempts and median of accuracy in the Grades V, VI, VII, and VIII, of Santa Clara County and a county in southeast Ohio, also the standard set by S. A. Courtis. Distance A–C = median of attempts. Distance A–B = median of accuracy.

girls have a kit full of the finest tools. Unless these tests are used for the purpose of aiding in diagnosing the cases they will fail to produce results. Or, to put the matter in another way, the purpose of the tests is to furnish a means through which the teacher and the superintendent will be able to discover a few more of the characteristics of the boy and the girl so that they may be able to reach the boy and the girl and give them beneficial care, which, otherwise, could not be provided.

PROGRESS BOOKS

EMILY H. WELCH
The Charlton School, New York City

In this day when accurate, complete, and permanent records of financial expenditures, of equipment and supplies, of attendance, and of achievement are considered to be the *sine qua non* of any well-organized school office, a discussion of other phases of this administrative problem should be of pertinent interest. I should like to present for your consideration, therefore, another kind of record which I believe to be equally important and which, as far as I have been able to ascertain, few schools are using. I refer to the keeping of progress books as a record of the work actually done from day to day and week to week in each class. This scheme has been in use at the Charlton School for many years and has proved its value so constantly that it has come to be a *sine qua non* to us.

The procedure is this: Every Friday each teacher writes out a statement of the work which has been accomplished in each of her classes during the week. For each subject she uses a separate sheet of paper of designated size (about $5\frac{1}{2}\times 8$ inches) with two holes in the margin at the left for the purpose of binding at the end of the year. Her statement includes the general topics that have been discussed, the number of pages of the textbook covered, any experimental work done in a scientific subject, the list of problems in mathematics, and any other data that need to be recorded. The degree of detail may be determined according to the judgment of the administrative head of the school, but brevity and conciseness should be kept in mind as important features. At the top of each sheet are written the name of the class, including the subject and grade or number of semester, and the date for the week—as, for example, October 2–6, 1916.

At the end of the year these sheets are bound together in a stiff manila paper cover with a frontispiece for each class containing

the following additional information: (1) a list of the members of the class with a note of any irregular entrance or withdrawal, (2) a list of the textbooks used and a note of portions omitted, (3) a condensed account of the ground covered by the course, and (4) the name of the teacher. In the elementary school the subjects which are taught by the grade teacher are bound in one cover with sheets of yellow paper to separate them. French, art, science, which are taught by specialists, and the subjects of the high school are bound according to departments with a sheet of yellow paper separating the work of the different classes. The binding may sound formidable, but it involves merely the use of long brass fasteners. These books are kept on a shelf in the school office, where they are available for reference.

Experience has proved the usefulness of these books to teachers, students, and principals in many ways. A teacher may check up her own work by comparing her weekly progress in successive years. In this connection they are proving especially beneficial this year in view of our late opening, incident to the epidemic of infantile paralysis. We are able to determine from week to week how much of our lost time we are making up and to estimate more definitely the prospects of covering the ground necessary in order that our students may be ready for the college-entrance examinations in June. Furthermore, a teacher may acquire a better perspective of the year's work as a whole. Two teachers teaching the same subject may use the progress books as a basis for comparison and discussion. Two teachers of history and English, for example, who may wish to correlate their work, are able to plan the year's outlines more definitely with a concrete statement of daily lessons before them. A new teacher can become thoroughly familiar with the material used and the methods employed by her predecessor. It frequently happens that a student, after leaving school may decide to continue her studying at a higher institution of learning, and for entrance to that institution a statement of the work covered, textbooks used, etc., in her preparatory school may be necessary. This is easily and completely obtained by reference to the progress books. These books are perhaps of the greatest value to the principal, for in them he has, in a compact, concise form, a complete

story of the entire academic work for the year, and during the year he can watch the progress of the work in each class and can be familiar with the point reached at any moment.

And finally, in addition to their value in the "here and now," these progress books will prove to be very useful to future generations. In searching the archives of the past, how eagerly we study the diary of even a very unimportant person and how much light it may throw upon the traditions which exist today. Every day in every school means history in the making, and I believe that we are justified in assuming that those who follow us will not only be equally interested in, but will also profit greatly by, our searching after the truth. We ought, therefore, to provide them with a detailed account of our struggles.